SF
C58
#402
VOL. 2
C.2

D
REF
711.4097
C818

5/S



SAN FRANCISCO
PUBLIC LIBRARY

REFERENCE
BOOK

Not to be taken from the Library

SF
C58
#402
v.2
c.2

DOCUMENTS DEPT.
JUN 3 1983
SAN FRANCISCO
PUBLIC LIBRARY

SF City Planning

GROWTH MANAGEMENT ALTERNATIVES FOR DOWNTOWN SAN FRANCISCO

DOWNTOWN EIR CONSULTANT'S REPORT

Volume 2: Appendices



May 1983

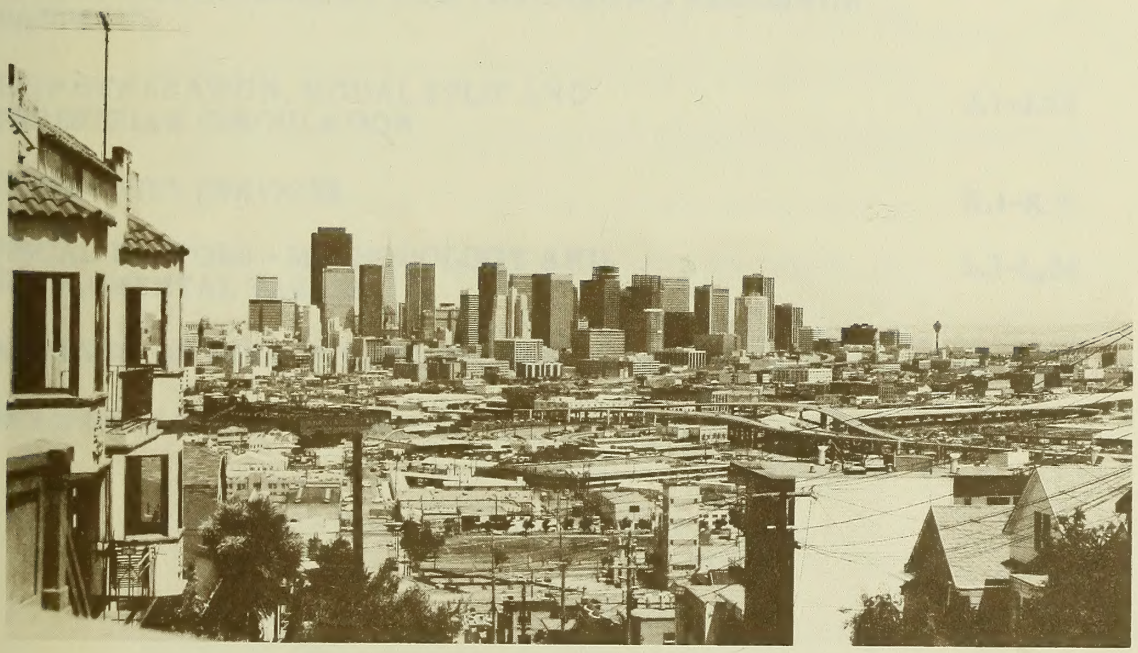
Prepared by Environmental Science Associates, Inc.

SAN FRANCISCO PUBLIC LIBRARY
3 1223 03582 7808

GROWTH MANAGEMENT ALTERNATIVES FOR DOWNTOWN SAN FRANCISCO

DOWNTOWN EIR CONSULTANT'S REPORT

Volume 2: Appendices



May 1983

Prepared by Environmental Science Associates, Inc.

D REF 711.4097 G919
v.2

Growth management
alternatives for
1983.

S.F. PUBLIC LIBRARY

3 1223 03582 7808

VOLUME II: APPENDICES

TABLE OF CONTENTS

	Page
INITIAL STUDY	A.1-A.15
ALTERNATIVES	B.1.1-B.5.32
LAND USE INVENTORY	C.1-C.5
CONSTRUCTION FEASIBILITY ANALYSIS	D.1-D.26
ARCHITECTURAL RESOURCE EVALUATON	E.1-E.47
EMPLOYER AND EMPLOYEE SURVEYS: METHODOLOGY AND PROCEDURES	F.1-F.33
LAND USE AND REAL ESTATE DEVELOPMENT ANALYSIS	G.1-G.77
EMPLOYMENT ANALYSIS	H.1-H.74
THEORETICAL DISCUSSION OF HOUSING MARKET EFFECTS/METHODOLOGY FOR FORCASTING RESIDENCE PATTERNS	I.1-I.41
TRIP GENERATION, MODAL SPLIT AND PEDESTRIAN CIRCULATION	J.1-J.22
COMMUNITY SERVICES	K.1-K.7
FISCAL FACTORS - METHODOLOGY AND SUPPLEMENTAL TABLES	L.1-L.84
ANALYSIS OF WIND TUNNEL STUDIES	M.1-M.4
SKYLINE IMAGE ANALYSIS	N.1

LIST OF FIGURES

Figure		Page
D.1.	ALTERNATIVE 1 BUILDING PROTOTYPE	D.7
D.2.	ALTERNATIVE 2 BUILDING PROTOTYPE	D.11
D.3.	ALTERNATIVE 3 BUILDING PROTOTYPE	D.15
D.4.	ALTERNATIVE 4 BUILDING PROTOTYPE	D.19
D.5.	ALTERNATIVE 5 BUILDING PROTOTYPE	D.23
E.1.	DESIGNATED ARCHITECTURAL RESOURCES REFERENCE MAP	E.36
E.2.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 1	E.37
E.3.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 2	E.38
E.4.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 3	E.39
E.5.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 4	E.40
E.6.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 5	E.41
E.7.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 6	E.42
E.8.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 7	E.43
E.9.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 8	E.44
E.10.	DESIGNATED ARCHITECTURAL RESOURCES, MAP 9	E.45
F.1.	SAMPLING DESIGN FOR DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEYS	F.7
F.2.	FACTORS USED TO WEIGHT DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEY RESPONSES	F.19
G.1.	REAL ESTATE FEASIBILITY MODEL: COMPONENTS AND DEFINITIONS	G.3
G.2.	DYNAMIC PROCESS OF REAL ESTATE MARKET ADJUSTMENTS TO CHANGED LAND USE POLICIES FOR OFFICE DEVELOPMENT	G.37

Figure		Page
G.3.	YBC MAIN PROGRAM ALTERNATIVE SHOWING C-3 DISTRICT BOUNDARY	G.76
G.4.	DOWNTOWN CENSUS TRACTS USED TO IDENTIFY HOUSING UNITS IN C-3 DISTRICT	G.77
H.1.	PROCEDURE FOR ESTIMATING C-3 DISTRICT EMPLOYMENT	H.6
H.2.	PROCEDURE FOR ESTIMATING CONSTRUCTION EMPLOYMENT FROM NEW CONSTRUCTION	H.12
H.3.	DIAGRAM OF PROCESS OF DEVELOPING C-3 DISTRICT EMPLOYMENT AND LAND USE DEVELOPMENT FORECASTS FOR THE FIVE ALTERNATIVES	H.36
H.4.	DOWNTOWN EIR EMPLOYER SURVEY OCCUPATION/WAGE SALARY MATRIX	H.56
H.5.	DOWNTOWN STUDY AREA USED IN DEPARTMENT OF CITY PLANNING FORECASTS	H.73
H.6.	BOUNDARIES OF SAN FRANCISCO CENTRAL BUSINESS DISTRICT USED IN CENSUS OF RETAIL TRADE	H.74
I.1.	DIAGRAM OF FACTORS CONSIDERED IN FORECASTING FUTURE RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS	I.10
I.2.	SOUTH OF MARKET/FOLSOM SURVEY AREA AND SUBAREAS	I.41
J.1.	REGIONAL TRAVEL ASSIGNMENT AREAS	J.7
J.2.	PHOTOS OF PEDESTRIAN FLOW LEVELS	J.20

LIST OF TABLES

Table		Page
D.1.	C-3 USE DISTRICTS AND HEIGHT DISTRICTS ANALYSED IN CONSTRUCTION FEASIBILITY ANALYSIS, BY ALTERNATIVE	D.2
D.2.	PROTOTYPICAL FLOOR AREA RATIOS FOR OFFICE CONSTRUCTION IN THE C-3 DISTRICT, BY ALTERNATIVE	D.4
D.3.	CONSTRUCTION COST SUMMARY	D.5
D.4.	BUILDING PROTOTYPE FOR ALTERNATIVE 1	D.8
D.5.	BUILDING PROTOTYPE FOR ALTERNATIVE 2	D.12
D.6.	BUILDING PROTOTYPE FOR ALTERNATIVE 3	D.16
D.7	BUILDING PROTOTYPE FOR ALTERNATIVE 4	D.20
D.8.	BUILDING PROTOTYPE FOR ALTERNATIVE 5	D.24
E.1.	C-3 DISTRICT BUILDINGS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES	E.4
E.2.	CITY LANDMARKS IN THE C-3 DISTRICT	E.5
E.3.	RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT	E.7
E.4.	RATED BUILDINGS DEMOLISHED IN THE C-3 DISTRICT, 1979 THROUGH OCTOBER 1982	E.46
F.1.	DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEYS: SAMPLE SIZE BY BUSINESS ACTIVITY AND SUBAREA	F.25
G.1.	VALUE OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-0 DISTRICT WITH FAR OF 4	G.11
G.2.	VALUE OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-0 DISTRICT WITH FAR OF 8	G.12
G.3.	ANALYSIS OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-R DISTRICT WITH FAR OF 2	G.13
G.4.	ANALYSIS OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-R DISTRICT WITH FAR OF 4	G.14

LIST OF TABLES (Continued)

Table		Page
G.5.	VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDR'S) FROM DESIGNATED HISTORIC BUILDINGS: ALTERNATIVE 1	G.18
G.6.	VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDR'S) FROM DESIGNATED HISTORIC BUILDINGS: ALTERNATIVE 2	G.19
G.7.	VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDR'S) FROM DESIGNATED HISTORIC BUILDINGS: ALTERNATIVE 3	G.20
G.8.	VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDR'S) FROM DESIGNATED HISTORIC BUILDINGS: ALTERNATIVE 4	G.21
G.9.	VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDR'S) FROM DESIGNATED HISTORIC BUILDINGS: ALTERNATIVE 5	G.22
G.10.	HOUSING PRODUCTION COSTS ASSUMING THAT OFFICE SPACE BONUSES FOR HOUSING (IF ANY) ARE USED TO SUBSIDIZE THE HOUSING	G.27
G.11.	POSSIBLE SCENARIO OF HOUSING DEVELOPMENT RESULTING FROM C-3 DISTRICT POLICIES, 1990-2000	G.29
G.12.	C-3 DISTRICT SPACE BY USE AND SUBAREA, 1981	G.54
G.13.	C-3 DISTRICT SPACE BY USE AND SUBAREA, 1984	G.55
G.14.	C-3 DISTRICT SPACE BY USE AND SUBAREA, 1990	G.56
G.15.	ALTERNATIVE 1 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000	G.57
G.16.	ALTERNATIVE 2 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000	G.58
G.17.	ALTERNATIVE 3 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000	G.59
G.18.	ALTERNATIVE 4 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000	G.60
G.19.	ALTERNATIVE 5 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000	G.61
G.20.	CHANGES IN C-3 DISTRICT SPACE BY USE, 1981-1984	G.62
G.21.	CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1981-1984	G.63
G.22.	CHANGES IN C-3 DISTRICT SPACE BY USE, 1984-1990	G.64

Table		Page
G.23.	CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1984-1990	G.65
G.24.	ALTERNATIVE 1 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000	G.66
G.25.	ALTERNATIVE 1 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1990-2000	G.67
G.26.	ALTERNATIVE 2 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000	G.68
G.27.	ALTERNATIVE 2 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1990-2000	G.69
G.28.	ALTERNATIVE 3 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000	G.70
G.29.	ALTERNATIVE 3 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1990-2000	G.71
G.30.	ALTERNATIVE 4 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000	G.72
G.31.	ALTERNATIVE 4 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1990-2000	G.73
G.32.	ALTERNATIVE 5 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000	G.74
G.33.	ALTERNATIVE 5 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUBAREA, 1990-2000	G.75
H.1.	C-3 DISTRICT BUSINESS ACTIVITIES AND FUNCTIONS	H.8
H.2.	C-3 DISTRICT BUSINESS ACTIVITIES AND EMPLOYMENT DENSITIES, 1981	H.9
H.3.	COMPARISON OF C-3 DISTRICT AND DOWNTOWN AREA EMPLOYMENT ESTIMATES	H.17
H.4.	BASELINE FORECAST OF C-3 DISTRICT EMPLOYMENT GROWTH POTENTIALS	H.21
H.5.	SUMMARY OF BASELINE C-3 DISTRICT EMPLOYMENT FORECASTS FOR PRIMARY OFFICE BUSINESS ACTIVITIES, 1981-2000	H.27

LIST OF TABLES (Continued)

Table		Page
H.6.	SUMMARY OF BASELINE C-3 DISTRICT EMPLOYMENT FORECASTS FOR SECONDARY OFFICE BUSINESS ACTIVITIES, 1981-2000	H.30
H.7.	C-3 DISTRICT RETAIL ACTIVITY, 1981, 1984, 1990, AND 2000, BY ALTERNATIVE	H.45
H.8.	CHANGE IN C-3 DISTRICT RETAIL ACTIVITY, 1981-84, 1984-90, 1990-2000, BY ALTERNATIVE	H.46
H.9.	COMPARISON OF EMPLOYMENT FORECASTS	H.49
H.10.	COMPARISON OF EMPLOYMENT FORECASTS BY SECTORS	H.51
H.11.	DISTRIBUTION OF OCCUPATIONS FOR DETAILED OFFICE ACTIVITIES, 1981	H.58
H.12.	DISTRIBUTION OF WAGES AND SALARIES FOR DETAILED OFFICE ACTIVITIES, 1981	H.59
H.13.	C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY, 1981, 1984, 1990	H.66
H.14.	C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE, 2000	H.67
H.15.	C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981, 1984, 1990	H.68
H.16.	C-3 DISTRICT EMPLOYMENT BY SUBAREA AND ALTERNATIVE, 2000	H.69
H.17.	CHANGE IN C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY, 1981-1984, 1984-1990 AND 1990-2000, BY ALTERNATIVE	H.70
H.18.	CHANGE IN C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981-1984, 1984-1990 AND 1990-2000, BY ALTERNATIVE	H.71
H.19.	C-3 DISTRICT CONSTRUCTION EMPLOYMENT, ANNUAL AVERAGE 1981-2000, BY COMPONENT	H.72
I.1.	SUMMARY OF CHANGES IN THE AMOUNT AND DISTRIBUTION OF HOUSING THROUGHOUT THE REGION, 1970, 1980, AND 2000	I.14

Table		Page
I.2.	SUMMARY OF CHANGES IN THE NUMBER AND DISTRIBUTION OF EMPLOYED RESIDENTS THROUGHOUT THE REGION, 1970, 1980, AND 2000	I.15
I.3.	SCENARIOS FOR GROWTH OF HOUSEHOLDS AND EMPLOYED RESIDENTS IN SAN FRANCISCO	I.18
I.4.	SCENARIOS ILLUSTRATING EFFECT OF C-3 DISTRICT HOUSING POLICY ON EMPLOYED RESIDENTS IN SAN FRANCISCO	I.21
I.5.	EXAMPLES OF THE RELATIVE ATTRACTION OF C-3 DISTRICT JOBS TO RESIDENTS OF SELECTED BAY AREA COUNTIES	I.23
I.6.	SCENARIOS FOR C-3 DISTRICT EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE	I.28
I.7.	C-3 DISTRICT PRIMARY OFFICE EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE, 1990 AND 2000	I.35
I.8.	C-3 DISTRICT OFFICE EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE, 1990 AND 2000	I.36
I.9.	EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 1984 AND 1990	I.37
I.10.	EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 2000	I.38
J.1.	C-3 DISTRICT TRIP GENERATION RATES BY BUSINESS ACTIVITY GROUP	J.4
J.2.	RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR, BY SUBAREA, 1984	J.6
J.3.	RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR, BY SUBAREA, 1990	J.8
J.4.	RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR, ALTERNATIVES 1, 2 AND 3; 2000	J.9
J.5.	RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR, ALTERNATIVES 4 AND 5; 2000	J.10

LIST OF TABLES (Continued)

Table		Page
J.6.	TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS BY MODE, 1984	J.11
J.7.	TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS BY MODE, 1990	J.12
J.8.	TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS BY MODE, ALTERNATIVES 1 THROUGH 5, 2000	J.13
J.9.	C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 1984	J.14
J.10.	C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 1990	J.15
J.11.	C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 2000	J.16
J.12.	PEDESTRIAN FLOW REGIMES	J.19
K.1.	C-3 DISTRICT SOLID WASTE GENERATION, BY SUBAREA, 1981	K.1
K.2.	1982 REPORTED CRIMINAL INCIDENTS FOR SAMPLE ADDRESSES	K.3
K.3.	SELECTED SAMPLE ADDRESSES FOR TABLE K.2.	K.4
K.4.	EXISTING (1981-82) POLICE DEPARTMENT PERSONNEL RATIOS	K.5
K.5.	EXISTING (1981-82) POLICE DEPARTMENT COST RATIOS	K.5
K.6.	FIRE AND NON-FIRE INCIDENTS IN 1981 AND 1982 FOR SELECTED SAMPLE ADDRESSES	K.6
K.7.	FIREFIGHTING UNIT SERVICE HOURS FOR FIRE AND NON-FIRE INCIDENTS IN THE C-3 DISTRICT, 1982	K.7
L.1.	ASSESSED VALUE OF C-3 DISTRICT AS PERCENTAGE OF ASSESSED VALUE CITYWIDE: 1982-83 ASSESSMENT ROLL	L.1

LIST OF TABLES (Continued)

Table		Page
L.2.	METHODOLOGY FOR ESTIMATING TAXABLE SALES IN THE C-3 DISTRICT, 1981	L.3
L.3.	PAYROLL/BUSINESS TAX COLLECTIONS FROM C-3 DISTRICT AS PERCENTAGE OF PAYROLL/BUSINESS TAX COLLECTIONS CITYWIDE: 1981	L.5
L.4.	METHODOLOGY FOR ESTIMATING SHARE OF SAN FRANCISCO HOTEL TAX REVENUE GENERATED BY C-3 DISTRICT, 1981-82	L.6
L.5.	METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES	L.8
L.6.	ADDITIONAL ASSESSED VALUE IN C-3 DISTRICT IN 1990 AND 2000, DUE TO SPACE ADDED AND REMOVED 1984-1990 AND 1990-2000	L.18
L.7.	ADDITIONAL ASSESSED VALUE IN C-3 DISTRICT IN 2000, DUE TO SPACE ADDED AND REMOVED DURING 1984-2000	L.19
L.8.	DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 1990 AND IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-1990 AND 1990-2000	L.20
L.9.	DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-2000	L.22
L.10.	METHODOLOGY FOR FORECASTING PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT	L.24
L.11.	PAYROLL/BUSINESS TAX COLLECTIONS IN C-3 DISTRICT: CORRESPONDENCE BETWEEN BUSINESS CLASSIFICATIONS AND BUSINESS ACTIVITIES	L.28
L.12.	ADDITIONAL PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN EMPLOYMENT 1984-1990 AND 1990-2000	L.30
L.13.	ADDITIONAL PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN EMPLOYMENT, 1984-2000	L.31
L.14.	METHODOLOGY FOR FORECASTING C-3 DISTRICT TAXABLE TRANSACTIONS AND SALES TAX REVENUE	L.32

LIST OF TABLES (Continued)

Table		Page
L.15.	ADDITIONAL TAXABLE SALES IN C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGE IN SALES 1984-1990 AND 1990-2000	L.35
L.16.	ADDITIONAL TAXABLE SALES IN C-3 DISTRICT IN 2000, DUE TO CHANGES IN SALES 1984-2000	L.36
L.17.	ADDITIONAL CITY SALES TAX REVENUES IN 1990 AND 2000 DUE TO CHANGE IN TAXABLE SALES IN C-3 DISTRICT, 1984-1990 AND 1990-2000	L.37
L.18.	ADDITIONAL CITY SALES TAX REVENUES IN 2000, DUE TO CHANGE IN TAXABLE SALES IN C-3 DISTRICT, 1984-2000	L.38
L.19.	METHODOLOGY FOR FORECASTING HOTEL TAX REVENUES FROM FUTURE C-3 DISTRICT HOTEL DEVELOPMENT	L.39
L.20.	ADDITIONAL C-3 DISTRICT HOTEL ROOM RECEIPTS IN 1990 AND 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS, 1984-1990 AND 1990-2000	L.42
L.21.	ADDITIONAL C-3 DISTRICT HOTEL ROOM RECEIPTS IN 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-2000	L.43
L.22.	ADDITIONAL HOTEL TAX REVENUES FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-1990 AND 1990-2000	L.44
L.23.	ADDITIONAL HOTEL TAX REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-2000	L.45
L.24.	METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT	L.46
L.25.	METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM TELEPHONE USE IN C-3 DISTRICT	L.54
L.26.	METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM WATER CONSUMPTION IN C-3 DISTRICT	L.58
L.27.	BUILDINGS IN C-3 DISTRICT CHOSEN FOR SURVEY OF WATER CONSUMPTION CHARACTERISTICS	L.62

Table		Page
L.28.	ADDITIONAL CONSUMPTION OF WATER, ELECTRICITY, AND NATURAL GAS IN C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN CONSUMPTION 1984-1990 AND 1990-2000	L.63
L.29.	ADDITIONAL CONSUMPTION OF WATER, ELECTRICITY, AND NATURAL GAS IN C-3 DISTRICT IN 2000, DUE TO CHANGES IN CONSUMPTION 1984-2000	L.64
L.30.	ADDITIONAL UTILITY USERS TAX REVENUE IN 1990 AND 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-1990 AND 1990-2000	L.65
L.31.	ADDITIONAL UTILITY USERS TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN UTILITY CONSUMPTION	L.66
L.32.	METHODOLOGY FOR FORECASTING FRANCHISE TAX REVENUES FROM UTILITY CONSUMPTION IN C-3 DISTRICT	L.67
L.33.	ADDITIONAL FRANCHISE TAX REVENUE FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-1990 AND 1990-2000	L.68
L.34.	ADDITIONAL FRANCHISE TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-2000	L.69
L.35.	METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT	L.70
L.36.	METHODOLOGY FOR FORECASTING FARE REVENUES FROM ADDITIONAL PEAK PERIOD MUNI RIDERS	L.75
L.37.	ADDITIONAL MUNI VEHICLES NEEDED IN 1990 AND 2000 TO ACCOMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-1990 AND 1990-2000	L.77
L.38.	ADDITIONAL MUNI VEHICLES NEEDED IN 2000 TO ACCOMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000	L.78
L.39.	CAPITAL COST OF ADDITIONAL MUNI VEHICLES NEEDED IN 1990 AND 2000 TO ACCOMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000 AND 1990-2000	L.79
L.40.	CAPITAL COST OF ADDITIONAL MUNI VEHICLES NEEDED IN 2000 TO ACCOMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000	L.80

Table		Page
L.41.	CAPITAL COST OF ADDITIONAL VEHICLE MAINTENANCE AND STORAGE FACILITIES NEEDED IN 1990 AND 2000 TO ACCOMODATE ADDITIONAL MUNI VEHICLES, 1984-1990 AND 1990-2000	L.81
L.42.	CAPITAL COST OF ADDITIONAL VEHICLE MAINTENANCE AND STORAGE FACILITIES NEEDED IN 2000 TO ACCOMODATE ADDITIONAL MUNI VEHICLES, 1984-2000	L.82
L.43.	NET CHANGE IN MUNI OPERATING COST IN 1990 AND 2000 DUE TO CHANGE IN C-3 DISTRICT MUNI RIDERSHIP, 1984-1990 AND 1990-2000	L.83
L.44.	NET CHANGE IN MUNI OPERATING COST IN 2000 DUE TO CHANGE IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000	L.84
M.1.	DOWNTOWN PROJECTS TESTED IN WIND TUNNEL	M.4

APPENDIX A: INITIAL STUDY

To Whom It May Concern

From Barbara Sahm, Assistant Environmental Review Officer

Attached is the Department of City Planning determination that a focused Environmental Impact Report (EIR) is required on the subject project. The discussion portion of the determination describes those areas where the proposed project may have a significant environmental impact and indicates that the EIR must cover those topics. The discussion also indicates that a few topics need not be covered in the EIR because significant impacts would not occur. If you think that coverage of an excluded topic is necessary, you may write to the Department and explain the reasons why you think a significant impact could occur (please include the file number EE81.3 in your correspondence). The attached discussion will not be revised but if Department staff or the Monitoring Panel agree that there could be a significant effect in the area of concern, the topic could be included in the EIR.

When a Draft EIR has been prepared, a copy will be mailed to you and you will have the opportunity to comment on it.

DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102
(415) 552-1134

NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED

Date of this Notice: February 13, 1981

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Barbara Sahm Tel: (415) 552-1134

Project Title: EE81.3 Downtown San Francisco EIR

Project Sponsor: San Francisco Planning & Urban Research for Monitoring Panel comprised of John Jacobs, Joseph Martin, Esq., and Charles Starbuck.

Project Contact Person: Richard Morten

Project Address: C-3 zoned districts in San Francisco

Assessor's Block(s) and Lot(s): See City Zoning Maps Sheets 1 & 2

City and County: San Francisco

Project Description: Analysis of 6 alternatives for development control in the Downtown area.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

Project Description

The subject of the initial study is the group of alternative proposals for controlling development in the area of the City zoned C-3, downtown San Francisco. No one proposal has been chosen as a "proposed project"; therefore all will be analyzed at as much of an equal level as is possible, given the information available about each individual scenario. The alternatives were developed by various groups and organizations in an attempt to address issues related to downtown conservation and development.

Following is a brief summary of the alternative proposals. Copies of the full text of all proposals are on file for inspection at the Department of City Planning, Office of Environmental Review, 45 Hyde Street, Room 319.

(over)

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: February 24, 1981.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $25.00 filing fee.

cc: Attached List.
Dean Macris.
Robert Passmore
George Williams
Lucian Blazej
City Planning Commissioners

for

Alec S. Bash, Environmental Review Officer

ER5 6/80

Alternative 1 would consist of the Recommended Growth Management Program presented in Section 3 of the Downtown Growth Management Program, prepared by Bolles Associates and Livingston & Associates for the San Francisco Chamber of Commerce in October 1979.

Source: San Francisco Chamber of Commerce

Reference: Downtown Growth Management Program, Bolles/Livingston - October 1979.

This proposal calls for a reduction in height and revised bulk standards for new construction in the C-3-O zone and calls for base and maximum Floor Area Ratios (FAR) as follows:

Zoning District	Basic F.A.R.	Maximum F.A.R.
C-3-O	12	18
C-3-R	8	12
C-3-G	8	12
C-3-S	7	10.5

Development bonuses would be provided for certain amenities such as plazas, and transfer of development rights are allowed for preservation of landmark quality of buildings. Mandatory design review and implementation of a Transportation Systems Management (TSM) program is also called for.

Alternative 2 would consist of the proposed initiative ordinance, Proposition "O", which was presented to San Francisco in November 1979.

Source: San Franciscans For Reasonable Growth

Reference: Proposition "O" Initiative Ordinance November 1979

This proposal calls for the reduction of height and Floor Area Ratios according to the following schedule:

Zoning District	Basic F.A.R.	Maximum F.A.R.	Maximum Height
C-3-O	8	14	260
C-3-R	7	10	150
C-3-G	5	8	130
C-3-S	5	8	130

In addition, the proposal calls for bonuses for landmark preservation, housing production, and for the development of bonuses for encouraging public transit usage, energy conservation, improved pedestrian environment, and development of additional housing in San Francisco.

The Sedway-Cooke study mirrors Proposition "O". Rather than treating this as a full alternative, it should be considered as a subset of Proposition "O". Only those elements of the Sedway-Cooke proposal that are more restrictive than Proposition "O" should be analyzed for their impact.

Alternative 3 would consist of a package of five initiatives (the "SFRG initiatives") which would have amended the C-3 District regulations of the City Planning Code had they been approved in the November 1980 election. Public notices of the intent to circulate petitions appeared on June 9, 1980, and provide the bases for describing this alternative.

Source: San Franciscans For Reasonable Growth

Reference: Notice of Intention to Circulate a Petition for Six Initiative Ordinances - June 1980

a. Fair Taxation Initiative
b. Annual Limit on Office Development - (use same guidelines as in Alternative 4, below)
c. Incentive for Preservation
d. Height Reduction
e. Tandem Housing
f. Floor Area Ratios and Bonuses

These proposals call for:

a. Prohibition against downtown development if studies show that public costs of serving downtown development exceed tax revenues, until such time as the cost/revenue balance is restored.

b. Institution of an annual limit on office development of one million square feet.

c. Preservation of landmarks and structures of merit by allowing the transfer of unused development rights at a multiple to be established by ordinance.

d. Reduction of height and bulk limits and the reduction of the C-3 district by ordinance.

e. Construction of one housing unit for every four employees or pay an in-lieu fee to the City.

f. Setting existing base floor area ratios (FAR) as the maximum and new base FAR's at one half existing for each C-3 district, and allowing for bonuses for plazas, housing, preservation, energy conservation, and transportation improvements.

Alternative 4 would place a ceiling on the annual rate of growth in the C-3 District, limiting it to 1.5 million gross square feet per year. This growth rate is intended to approximate the recent growth rate of Downtown development.

Source: Monitoring Panel -- Downtown EIR Program

Guidelines:

a. This alternative would apply to the C-3 zoning districts as currently mapped.

b. The analysis will use the base FAR for each C-3 zoning district without development bonuses.

c. A second level of analysis will be done in which each of the C-3 zoning districts would have a density equal to the base FAR plus an average development bonus of 3.5 FAR.

Alternative 5 would consist of proposed development controls presented in Approaches for Resolving Issues of Downtown Conservation and Development, which is presently in final preparation by the Department of City Planning. A draft of this document was published in September 1980.

Source: Staff -- Department of City Planning

Reference: Approaches for Resolving Issues of Downtown Conservation and Development, Department of City Planning -- September 1980 and revisions.

This proposal calls for a reduction in height and revised bulk standards for new construction in the C-3 districts and calls for revised base and maximum FAR's. A transportation "improvement fee" and other mechanisms for transit improvement are proposed. New office development would be tied to the rate of housing production and transfer of development rights would be allowed when landmarks and structures of merit are preserved. Industrial uses would be protected by forbidding offices as a principal use in manufacturing zones. In order to allow for office and housing development, certain areas would be rezoned. Changes in land use are proposed including both an expansion and contraction of the C-3 district and rezoning of portions of North and South of Market for combined residential and commercial use.

Alternative 6 would consist of existing C-3 regulations with bonuses assumed to be an average of 3.5 FAR over base FAR's. The existing regulations will serve as the base line for analysis of alternatives and may also serve as the maximum "buildout" alternative since rate of growth can be assumed to be determined by market forces.

Source: Department of City Planning

Reference: San Francisco Zoning Ordinance, Zoning Map and Height and Bulk Districts.

The existing zoning ordinance regulates land use, density, building height and bulk, parking and access requirements, transfer of development rights from adjacent parcels, and provides for bonuses for certain features such as plazas, access to public transit, corner location and other aspects deemed to be public amenities. The existing C-3 zoning regulates density by setting forth base FAR's, which with bonuses have allowed for densities of up to 23.6 FAR. The base FAR's are as follows: C-3-O - 14; C-3-R - 10; C-3-G - 10; C-3-S - 7.

Potential Impacts

Significant environmental effects could occur in the following areas if any of the alternative proposals were implemented: land use, urban design and visual, historic buildings, community services, employment and housing, transportation, noise, air quality and climate, and energy. An environmental

impact report (EIR) will be needed covering possible impacts in these areas. The alternative proposals would not have significant effects and EIR coverage is not needed on the following areas: geology, biological sciences, use of water or other natural resources, hazards, or archaeological or cultural resources.

Implementation of any of the alternative proposals could conflict with some of objectives and policies in the City's Comprehensive Plan. The EIR will need to address conformity with Master Plan policies under each impact topic. Specifi note should be taken of policies and objectives in the Residence Element concerning preserving and maintaining the existing housing stock and in the Comminity Safety Element concerning policies for identifying and removing hazards of existing buildings that would undergo severe damage in the event of a "1906-type" earthquake. Taken together, the Master Plan suggests that existing housing (in the Downtown as well as throughout the City) should be perserved but should also be made earthquake safe. The City Planning Commission has identified buildings in the Downtown area that are of special architectural or historic significance; the Community Safety Element policy on eliminating earthquake hazards would suggest that these buildings should be made earthquake safe. The impacts analysis should include a general discussion under appropriate topics of whether the alternatives would comply with these policies as well as with any others applicable.

Several of the alternative proposals would require both rezoning and changes to the City Planning Code text. The project description in the EIR should describe, as possible, what the rezoning and text changes would need to be for each alternative, and explain the approval process for such amendments.

The alternative proposals could provide for Downtown development different from that which now exists, and the EIR should discuss generally what land use changes might occur under each proposal and should include a discussion of whether or not these land use changes would affect established business and residential communities in San Francisco. This discussion should also cover potential effects of each alternative on both designated landmarks and buildings determined by the City Planning Commission to be architecturally or historically important (Resolution No. 8275, May 29, 1980).

Although urban design and visual impacts cannot be described for specific buildings in analyzing the alternative proposals, any of the alternatives could have a significant visual and urban design impact which must be discussed in a general sense. This general analysis should include an indication of where loss or obstruction of long range views would occur, as well as discussion of changes in views from existing buildings.

Further study is needed regarding whether any of the alternatives would result in need for additional fire and police services and regarding whether or not electricity and natural gas services would need to be altered or increased as a result of development occurring under any of the alternative proposals. Because the school system in San Francisco presently is leasing many of its school sites for non-school use, it can be determined that additional development, particularly in the Downtown area, would not have a significant effect on the school system. Any of the alternative proposals would not be likely to affect existing communication systems, such as television and radio,

although individual buildings that might be permitted under one scenario or another could possibly interfere with reception at an adjacent building. Water and sewer services would not be affected specifically by any of the alternative proposals for downtown development control. The City's Clean Water Program staff are designing and managing construction of additional sewer capacity to handle larger storm flows; because storm water volumes can be as much as ten times average dry weather flows, the system capacity would not be affected by new office development Downtown. Solid waste disposal service needs may increase under some alternative scenarios. The City's solid waste disposal system is presently under review by CAO staff because the present contract for disposal at the Mt. View landfill will end in 1983. An EIR (EE79.307/NLA, Resource Conversion Center) has been prepared by the City of Brisbane covering one proposal for solid waste disposal and covering alternative systems, all of which would accommodate increases in solid waste volumes. Therefore, solid waste disposal impacts need be discussed only to the extent that a significant effect may occur and to the extent that increased services are not covered in the Resource Conversion Center EIR. None of the alternatives would specifically impact existing parks or recreation facilities and none specifically proposes to remedy any needs determined in the Recreation Open Space Element of the Comprehensive Plan. Therefore, this topic need not be covered in the EIR.

Any one of the alternative proposals could have a growth inducing impact and could require relocation of housing or businesses; these areas will need further investigation. If any one of the alternative proposals were implemented, indirect impacts could occur on employment in the City and County. Impacts could also occur on availability of and demand for housing in the City. Some alternative proposals could cause changes in either the daytime worker population or the residential population in certain areas of the Downtown; this potential impact needs further investigation. Implementation of any of the alternatives would have economic impacts on the City which, although not required by CEQA, should be discussed as part of this EIR in order to allow for reasoned decision making.

Any of the alternatives, if implemented, would have traffic and parking impacts on the freeway and local street systems and on parking supplies which must be discussed. The alternatives may have significant environmental effects on pedestrian and transit systems and on current circulation patterns and could also cause an increase in traffic hazards. The transportation study will need to include analysis of changes in travel modes that could occur under the various alternatives. Further investigation is needed as to whether any of the alternatives could cause a need for change in configuration of existing public roads. It is not expected that any of the alternatives would create the need for construction of new streets or highways.

The alternative proposals would permit continued new construction in the Downtown, which would cause temporary noise effects. Construction noise impacts occur under the existing situation and it would not be possible to reliably quantify differences in construction noise effects among the various alternative proposals; none of the alternatives would cause a significant adverse change in environmental conditions. Existing noise levels in the Downtown area would not be likely to impact buildings that might be permitted

under the alternative scenarios; any new residential buildings that might be impacted by the existing noise levels would need to comply with Title 25 Noise Insulation Standards in the California Administrative Code. Specific noise impacts of or on proposed new office or residential buildings would be more appropriately discussed under environmental analyses for individual buildings, rather than in the subject EIR.

Any of the alternative proposals that would permit additional building in the Downtown area would indirectly add to the existing air pollutant load. Although individual buildings may not, either during construction or by virtue of traffic generated during operation, cause violations of ambient air quality standards, building that could be permitted under some of the alternative scenarios could cumulatively cause air quality standards to be violated. This area needs further invistigation before a determination of significance can be made. None of the alternative scenarios would indirectly cause the creation of objectionable odors or include burning. Any alternative which allowed construction of high-rise buildings in the Downtown area could have significant impacts on wind patterns and on shading; both of these areas need to be investigated at a general level, consistent with the level of detail available for each of the alternatives.

Alternatives that would permit building additional square footage of either office or residential space in the study area would increase energy consumption in the City. Some alternative proposals could caues substantial increases in demand on the PG&E system. These areas need further study, again at a general level, discussing cumulative effects rather than individual building effects.

Because Downtown San Francisco is already fully built, there would be no impact on plant or animal life from any of the alternatives. Neither storm water run-off nor the quality of the public water supply would be affected by any of the alternatives. The quality of surface water would not be changed by the proposed projects. Although water use could be increased as an indirect effect of the implementation of some of the alternatives, the increase would not be significant when compared to the overall City water use. Other than energy, use of natural resources would not be affected by any of the alternatives. Implementation of any one of the alternative proposals would not change any potential for exposure of the public to hazards such as explosion or release of hazardous substances, nor would any of them interfere with the City's emergency response plan. Although construction that may be permitted under some of the alternative scenarios may require grading or excavation may generate spoils, these topics would be more appropriately treated under review of individual building proposals. Implementation of any one of the alternative scenarios would not in and of itself cause any effect on archaeological resources or ethnic or cultural resources; specific archaeological impacts of specific buildings possible under any one of the scenarios should not be discussed in this document.

Because the "project" is a group of alternative proposals, additional alternatives that may have been considered need be discussed only at a very general level of detail with enough information to explain why they are not expected to be considered for adoption. Mitigation measures that would reduce impacts of any of the alternatives must be covered in the EIR. It may be that

some or all of the features of one alternative would mitigate or reduce impacts of other alternatives; if this is found during the project analysis, the mitigation measures discussion should so note.

ENVIRONMENTAL EVALUATION CHECKLIST
(Initial Study)

Project File No: EE 81.3 Title: Downtown San Francisco Planning Alternatives

Address: City and County of San Francisco Assessor's Block and Lot: C-3 Zoning Distr

A. GENERAL CONSIDERATIONS:	Yes	Maybe	No	N/A	Disc?
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?		X			X
2. Would the project require a variance, or other special authorization under the City Planning Code?		X			X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?			X		
*4. Would the project conflict with adopted environmental plans and goals?		X			X
B. ENVIRONMENTAL IMPACTS:					
1. Land Use. Would the proposed projects:					
a. Be different from surrounding land uses?		X			X
*b. Disrupt or divide the physical arrangement of an established community?		X			
2. Visual Quality and Urban Design. Would the proposed project:					
a. Obstruct or degrade any scenic view or vista open to the public?		X			X
b. Reduce or obstruct views from adjacent or nearby buildings?		X			X
*c. Create a negative aesthetic effect?		X			X
d. Generate light or glare affecting other properties?			X		
3. Population/Employment/Housing. Would the proposed project:					
a. Alter the density of the area population?		X			X

**Further discussion warranted

3. Cont'd.	Yes	Maybe	No	N/A	Disc.
*b. Have a growth-inducing effect?		X			X
*c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?		X			X
d. Create or eliminate jobs during construction and operation and maintenance of the project?	X				
e. Create an additional demand for housing in San Francisco?	X				X
4. Transportation/Circulation. Would the construction or operation of the project result in:					
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	X				X
*b. An increase in traffic which is substantial in relation to existing loads and street capacity?	X				X
c. Effects on existing parking facilities, or demand for new parking?	X				X
d. Alteration to current patterns of circulation or movement of people and/or goods?		X			X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X			X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?		X			X
g. Construction of new public roads?			X		X
5. Noise.					
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	X				X
b. Would existing noise levels impact the proposed use?			X		
c. Are Title 25 Noise Insulation Standards applicable?	X				X

	Yes	Maybe	No	N/A	Disc.
6. Air Quality/Climate. Would the proposed project result in:					
*a. Violation of any ambient quality standard or contribution to an existing air quality violation?		X			X
*b. Exposure of sensitive receptors to air pollutants?		X			
c. Creation of objectionable odors?			X		X
d. Burning of any materials including brush, trees, or construction materials?			X		X
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X				X
7. Utilities and Public Services. Would the proposed project:					
a. Have an effect upon, or result in a need for new or altered, governmental services in any of the following?					
fire protection		X			X
police protection		X			X
schools			X		X
*parks or other recreational facilities			X		X
maintenance of public facilities			X		
power or natural gas		X			X
communications systems			X		X
water			X		X
*sewer/storm water drainage			X		X
solid waste collection and disposal		X			X
8. Biology.					
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?			X		
*b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?			X		
c. Would the project require removal of mature scenic trees?			X		

. Land. (topography, soils, geology) Would proposed project result in or be subject to:

*a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)		X			
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	X				X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	X				N

Water. Would the proposed project result in:

*a. Reduction in the quality of surface water?			X		X
*b. Change in runoff or alteration to drainage patterns?			X		X
*c. Change in water use?		X			X
*d. Change in quality of public water supply or in quality or quantity (dewatering) of ground water?			X		

Energy/Natural Resources. Would the proposed project result in:

*a. Any change in consumption of energy?		X			
*b. Substantial increase in demand on existing energy sources?		X			X
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?			X		

Hazards. Would the proposed project result in:

*a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?			X		X
*b. Creation of or exposure to a potential health hazard.			X		
*c. Possible interference with an emergency response plan or emergency evacuation plan?			X		X

13. Cultural. Would the proposed project:	Yes	Maybe	No	N/A	Dis
*a. Include or affect a historic site, structure, or building?	X				X
*b. Include or affect a known archaeological resource or an area of archaeological resource potential?		X	X		X
*c. Cause a physical change affecting unique ethnic or cultural values?			X		X

C. MITIGATION MEASURES:	Yes	No	Disc.
Are mitigation measures included in the project?	X		X
Are other mitigation measures available?	X		X

D. ALTERNATIVES:

Were other alternatives considered:	X		X

E. MANDATORY FINDINGS OF SIGNIFICANCE:

*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	X		
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	X		
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects?)	X		X
*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?		X	
*5. Is there a serious public controversy concerning the possible environmental effect of the project?	X		

n the basis of this initial evaluation:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Rai Y. Okamoto
Director

Date: 2-10-81

APPENDIX B: ALTERNATIVES

This Appendix presents Alternatives 1 through 5 as they appear in their respective source documents.

Alternative 1

Appendix B.1 contains those portions of the San Francisco Planning Code that pertain directly to the C-3 District. The entire Code, which provides an overall regulatory context for all Alternatives and has occasional, though generally incidental, application to the C-3 District and other use districts incorporated in other Alternatives addressed in this report, is hereby incorporated by reference into this report./1/

Alternative 2

Appendix B.2 contains Chapter 3, "Recommendations for Managing Downtown Growth," from the Downtown Growth Management Program, prepared for the San Francisco Chamber of Commerce by Bolles Associates and Livingston & Associates, October 1979. The entire Downtown Growth Management Program, which provides the background and rationale for Chapter 3, is hereby incorporated by reference into this report./1/

Alternative 3

Appendix B.3 contains the text of "Proposition 'O'." The 1979 Proposition "O" voters' handbook entitled "Proposition 'O' Initiative Ordinance: Shall the Planning Code be Amended to Establish Reduced Building Height Limits, New Basic Floor Area Ratios and Development Bonuses in the Downtown Area; Prohibiting Certain Zoning Reclassifications?" provides an analysis, background, and arguments for and against the proposition, and is hereby incorporated by reference into this report./1/

Alternative 4

Appendix B.4 contains the texts of five "Notices of Intent to Circulate Petition," published June 9, 1980; the text of a letter from San Franciscans for Reasonable Growth

(SFRG), dated September 23, 1981, which amplifies and explains the intent of the five noticed initiatives; excerpts from South of Market: A Plan for San Francisco's Last Frontier, portions of which are incorporated by SFRG's reference into the Alternative; and the public notice of a rezoning proposed for the Tenderloin area by the North of Market Coalition, which is also incorporated by SFRG's reference into the Alternative.

Alternative 5

Appendix B.5 contains the text of Guiding Downtown Development, July 1982, published by the Department of City Planning. The Appendices to Guiding Downtown Development, contain explanations, background, elaboration and suggested implementing code language for Alternative 5, and are hereby incorporated by reference into this report./1/

NOTE - Alternatives

/1/ Documents incorporated by reference into this report are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, Room 400.

CITY AND COUNTY OF

San Francisco

CITY PLANNING CODE

1979 EDITION

With amendments to and including September 28, 1979

PART II

Chapter II of the San Francisco Municipal Code

Published By BUILDING NEWS, INC.
NORTHERN CALIFORNIA OFFICE:
55 New Montgomery Street, San Francisco, California 94105
SOUTHERN CALIFORNIA OFFICE and Headquarters:
3055 Overland Avenue, Los Angeles, California 90034 • (213) 870-9871

B.1.1

CITY AND COUNTY OF

SAN FRANCISCO

DIANNE FEINSTEIN, Mayor

BOARD OF SUPERVISORS
Room 235, City Hall
San Francisco, California 94102

District No.	Supervisor	District No.	Supervisor
1	Gordon J. Lau	7	Robert E. Gonzales
2	Louise Renne	8	Donald Horanzy
3	John L. Molinari	9	Lee S. Dolson
4	Ella H. Hutch	10	Quentin L. Kopp
5	Harry Britt	11	Ronald Pelosi
6	Carol R. Silver		

GILBERT H. BOREMAN, Clerk of the Board



nearer to a C-3 district than to any R district. The distance to the nearest R district or C-3 district shall be measured from the midpoint of the front line, or from a point directly across the street therefrom, whichever gives the greater ratio.

(d) In the Automotive Special Use District, as described in Section 237 of this Code, the basic floor area ratio limit shall be 10.0 to 1.

(e) In the Northern Waterfront Special Use Districts, as described in Sections 240 through 240.3 of this Code, the basic floor area ratio limit in any C district shall be 5.0 to 1.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 125. FLOOR AREA PREMIUMS, DISTRICTS OTHER THAN C-3. In any district other than a C-3 district in which a floor area ratio limit applies, the following premiums, where applicable, may be added to the basic floor area ratio limit to determine the maximum floor area ratio for a building or development.

(a) For a lot or portion thereof which is defined by this Code as a corner lot, a floor area premium may be added by increasing the area of the lot or portion, for purposes of floor area computation, by 25 per cent.

(b) For a lot or portion thereof which is defined by this Code as an interior lot, and which abuts along its rear lot line upon a street or alley, a floor area premium may be added by increasing the depth of the lot or portion along such street or alley, for purposes of floor area ratio computation, by one-half the width of such street or alley or 10 feet, whichever is the lesser.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 126. DEVELOPMENT BONUSES, C-3 DISTRICTS. (a) In any C-3 district, the development bonuses specified in the following table, where applicable, may be added to the basic floor area ratio limit to determine the maximum floor area ratio for a building or development. Each building feature, and the unit of feature upon which the bonus is based, are more fully described in and limited by Subsection (b) below. Each separate bonus shall be credited where it applies; except that features 1 and 2 shall be mutually exclusive, and features 8 and 9 shall also be mutually exclusive. The basic allowable gross floor area in each case shall be as specified in Section 124 of this Code, and shall not include any development bonus specified herein or any transferred floor area as specified in Section 127 below.

The primary purposes of these development bonuses are: provision of good access to buildings, and improvement of access to properties, from the various forms of transportation serving the downtown area; improvement of pedestrian movement into and out of buildings, along streets and between streets; provision of pedestrian amenity by means of ground level open space; arrangement of buildings to provide light and air to streets and to other properties; and protection and enhancement of views.

Quantity of Bonus Floor Area For Each Building Feature Provided

Building Feature	Unit of Feature Upon Which Bonus is Based	Square Feet of Bonus Floor Area Per Unit of Feature				Maximum For This Bonus (Per Cent of Basic Allowable Gross Floor Area)
		C-3-O	C-3-R	C-3-G	C-3-S	
1. Rapid Transit Access) Larger of these two bonuses applies	Provision of direct access to station mezzanine	20% of basic allowable gross floor area (1/3 less if station is for city transit only)				20
2. Rapid Transit Proximity)	Each linear foot by which walking distance to station mezzanine is less than 750 feet	50 (1/3 less if station is for city transit only)	40	40	40	10
3. Parking Access	Each automobile parking space to which direct access is provided	100	100	100	100	5
4. Multiple Building Entrances	Each major entrance to the building after the first such entrance	10,000	10,000	7,000	5,000	5 (or one entrance, whichever is greater)
5. Sidewalk Widening	Each creditable square foot of sidewalk widening area	7	7	6	4	15
6. Shortening Walking Distance	Each linear foot by which walking distance between streets or alleys is shortened	40	40	40	30	10
7. Plaza	Each creditable square foot of plaza area	10	8	8	6	15
8. Side Setback) Larger of these two bonuses applies	Each creditable square foot of side setback area	6	6	6	3	15
9. Low Coverage at Upper Floors)	Reduction of both building dimensions by 20% or more of the lot dimensions	5% of basic allowable gross floor area for the first 20% reduction of building dimensions; 1% for each 3% reduction thereafter				15
10. Observation Deck	Provision of observation deck or similar high-level public space	10,000	10,000	10,000	10,000	Not Applicable

(b) The following criteria shall apply to the building features listed in the table in Subsection (a) above, and to the unit of feature therein upon which each bonus is based.

1. **Rapid Transit Access.** The access shall be to a city or regional rapid transit system, leading directly to a station mezza-

nine of such system and conforming to the standards of the transit system, the Building Code and other applicable codes. The access shall be entered from a location within the lot lines of the subject lot, either within or outside a building, and shall be open during all business hours common in the area for use by the general public, marked for their use, and easily reached from a street or alley with a minimum sidewalk width of seven feet.

2. **Rapid Transit Proximity.** This bonus shall be available for any lot within 750 feet walking distance from a designated station mezzanine of a city or regional rapid transit system, and shall increase in proportion to the closeness of the lot to such mezzanine. The walking distance shall be measured along streets and alleys with a minimum sidewalk width of five feet, or along passageways conforming to the standards of features 1 above and 6 below. For this purpose, walking distance shall be taken as the shortest distance from any point along the station mezzanine, to any point along a lot line of the subject property from which there is general access to the subject building.

3. **Parking Access.** The access shall be from the subject building directly to an automobile parking structure located elsewhere than in the areas of concentrated development of the C-3-O and C-3-R districts. Such parking structure may be either part of or separate from the subject building, but if the parking structure is separate it shall be either in the same ownership as the subject building or part of a Planned Unit Development approved under Article 3 of this Code to include both the parking structure and the subject building. The access shall be open during all business hours for use by occupants of or visitors to the subject building and marked for their use, and shall provide a passage with a minimum width of five feet, separated from streets and alleys. A passageway that is proposed to bridge a street or alley or to occupy any other public area shall be reviewed by the City Planning Commission subject to the criteria for Master Plan review under the City Charter and any other criteria that may be applicable. No parking space to which access is credited under this provision shall consist of a space actually required by this Code for any building or use.

4. **Multiple Building Entrances.** This bonus shall be available where there is more than one major entrance to the subject building, open generally to occupants of the building for both entrance and exit and readily identifiable to them. All such major entrances shall be accessible from streets or alleys with a minimum sidewalk width of five feet, and shall be located at least 50 feet apart along such streets or alleys. Where a building face at ground level is located more than 20 feet inside the lot line along such a street or alley and contains at least one major doorway, each point at 50-foot intervals along such lot line shall be considered a separate major entrance to the building.

5. **Sidewalk Widening.** The sidewalk widening shall be along a through street or through alley, shall consist of an arcade, cantilever, building setback or plaza, open at all times to the general public, and shall run the full length of the lot along such street or alley except for necessary interruptions by fea-

tures required for safety by other provisions of law, ordinance or the Municipal Code. The widened area shall be directly accessible from the public sidewalk at both ends and along at least two-thirds of its length, and if not fully open to such sidewalk shall have a minimum clear width of seven feet. The widened area shall have a minimum height of 10 feet, and although it may be occupied in part by columns, building services, landscaping and other features, only areas capable of being walked upon shall be credited in computation of the bonus. The maximum creditable depth of the widened area from the lot line at the street or alley shall be 15 feet in the C-3-R district and 30 feet in the other C-3 districts, or 50 feet from the curb, whichever is less.

Notwithstanding the requirements of this provision concerning accessibility, continuity or horizontal dimensions, landscaped open area located as herein provided at ground level, consistent with the purposes of the bonus system and readily visible from a street or alley or permanent public open space, may be credited as sidewalk widening area within the scope of the 15 per cent maximum permitted for the sidewalk widening bonus in Table 2; provided, that the bonus awarded shall be three square feet of floor area for each creditable square foot of such open area.

6. **Shortening Walking Distance.** The shortening of walking distance shall be computed by comparing walking distances along streets and alleys having a minimum sidewalk width of five feet, with distances along walkways through the subject lot that are open during all business hours common in the area for use by the general public. Such a walkway may be either within or outside a building, shall be readily identifiable from the public sidewalk, and shall have a minimum width of 10 feet plus two feet for each side which has shops, lobbies, elevator entrances or similar features along it. Where a walkway passes through two or more lots, the bonus shall be prorated in proportion to the length of walkway on each lot.

7. **Plaza.** The plaza shall be directly and conveniently accessible to the general public during all business hours common in the area, from either a street or alley with a minimum sidewalk width of five feet, a feature conforming to the standards of 5 or 6 above, or a permanent public open space. The creditable plaza area shall be located at least 20 feet inside the lot lines separating the lot from streets and alleys, shall have a minimum entrance width of 10 feet, and shall be at least 30 feet in its horizontal dimensions. For the purpose of measuring such minimum horizontal dimensions, space occupied by a feature conforming to the standards of 5 above may be counted for up to one-third of any dimension; however, no area credited under 5 above shall also be credited as plaza area. Up to two-thirds of the surface of the creditable plaza area may be occupied by planting, sculpture, pools and similar features, and the balance shall be suitable for walking, sitting and similar pursuits. Any building servicing requiring the presence of vehicles or goods in the plaza area shall be confined to times other than the

by Section 136 of this Code for usable open space shall be permitted for the creditable plaza area.

Notwithstanding the requirements of this provision concerning accessibility or horizontal dimensions, landscaped open area located as herein provided at ground level, consistent with the purposes of the bonus system and readily visible from a street or alley or permanent public open space, may be credited as plaza area within the scope of the 15 per cent maximum permitted for the plaza bonus in Table 2; provided, that the bonus awarded shall be three square feet of floor area for each creditable square foot of such open area.

8. **Side Setback.** The side building setback shall extend upward from a height of not more than 40 feet measured at the front of the setback, and shall also extend for the entire depth of the lot. The side setback shall be located either along a lot line which intersects a street or alley and does not itself separate the lot from a street or alley, or in an equivalent position between two buildings or building portions on the same lot exceeding 40 feet in height. The setback area shall be unobstructed to the sky and shall have a minimum width of 20 feet. Setback areas of irregular width may be credited, provided the minimum width of 20 feet is maintained and no part of the setback area to be credited is separated by a building from the street or alley which the setback intersects. The maximum creditable width of the setback area shall be 50 feet.

9. **Low Coverage At Upper Floors.** Each open area credited under this bonus shall extend upward unobstructed from a height of not more than 80 feet measured at the front of such open area, and shall also extend for the entire width or depth of the lot. The bonus shall be based upon reduction of both the over-all width and the over-all depth of the building by a minimum of 20 per cent of the respective lot dimensions, with additional bonus awarded as both such dimensions of the building are further reduced. Where the building is not located parallel to any of the lot lines, the over-all dimensions of the building shall be measured as appropriate to the specific siting of the building in relation to the lot and to streets and alleys.

10. **Observation Deck.** The observation deck or similar public space shall be located at or above the 20th story of the building and shall be of sufficient size to accommodate at least 50 persons at one time. Such space shall be advertised at ground level, and shall be open during the day and evening to the general public without the necessity of their doing business in the building other than paying an admission fee for the sole purpose of gaining access to the observation area.

(c) In application of the bonuses provided for in this section, the Zoning Administrator shall follow such procedures, including placing of restrictions on the land records and other actions, as the Zoning Administrator may deem appropriate to assure the provision and retention of such building features as are credited in order to meet the requirements of this Code.

(d) In the C-3-O district, notwithstanding the development bonuses afforded by Subsections (a), (b) and (c) of this section, and in lieu of any and all such development bonuses, for a lot or portion thereof which is defined by this Code as a corner lot, a floor area premium may be added by increasing the area of the lot or portion, for purposes of determining the maximum floor area ratio for the building or development on such lot, by 20 per cent. *(Amended Ord. 443-78, Approved 10/6/78)*

SEC. 127. TRANSFER OF PERMITTED BASIC GROSS FLOOR AREA. (a) **When allowed.** The maximum permitted gross floor area for any building or development on a lot in the C-3-O district, to the exclusion of all other districts, may be increased by transfer to such lot of basic gross floor area that is permitted under Section 124 of this Code but unbuilt upon an adjacent lot; provided, that the aggregate of all such transfers from any one adjacent lot to all other lots shall be no more than one-half the basic gross floor area that would be permitted on said adjacent lot. Floor area premiums under Section 125 or 126, development bonuses under Section 126, and other floor area transfers under this section, shall not be transferable. For the purposes of this section, an adjacent lot is one which either abuts for a distance not less than 25 feet along a side or rear lot line of the lot to which the basic gross floor area transfer is made (hereinafter referred to as the transferee lot), or would so abut for such distance if not separated solely by an alley.

(b) **Landmarks.** The provisions of Subsection (a) above limiting transferee lots to those located in the C-3-O district, and limiting the aggregate of all transfers from an adjacent lot to one-half its permitted gross floor area, shall not apply where the adjacent lot is occupied by a historical, architectural or aesthetic landmark that has been so designated by the Board of Supervisors pursuant to Article 10 of this Code.

(c) **Required documentation.** No transfer of permitted basic gross floor area shall be effective under this Code unless an instrument, legally sufficient in both form and content to effect such a transfer, has been entered into among all the parties concerned, except that if both the adjacent lot and the transferee lot are in one ownership no such instrument shall be necessary. An attested copy of the said instrument of transfer shall be filed with the Department of City Planning prior to approval by said Department of any building permit application affected by such transfer. In addition, no transfer of permitted basic gross floor area shall be effective under this Code in any case unless a further document in a form approved by the City Attorney has been executed by the parties concerned, and by the Zoning Administrator, and recorded in the office of the County Recorder, serving as a notice of the restrictions under this Code applying both to the adjacent lot and to the transferee lot by virtue of this arrangement for transfer of permitted basic gross floor area. This notice of restrictions shall include a specific reference to the aforesaid instrument of transfer, except where both the adjacent lot and the transferee lot are in the same ownership.

(d) **Contents of required documents.** Both the instrument of transfer and the notice of restrictions shall specify (1) the

amount of permitted basic gross floor area to be transferred, the total amount permitted on the transferee lot by virtue of the transfer, and the remaining amount permitted on the adjacent lot; (2) the duration of the transfer, which shall be specified to be not less than the actual lifetime of any building on the transferee lot whose construction is made possible, in whole or in part, by the transfer; (3) the effects of any subsequent changes in the basic floor area ratio limit under this Code upon the permitted basic gross floor area for both lots; and (4) the effects of any subsequent changes in the size of either lot, whether by virtue of conveyance, condemnation or otherwise, upon the permitted basic gross floor area for both lots.

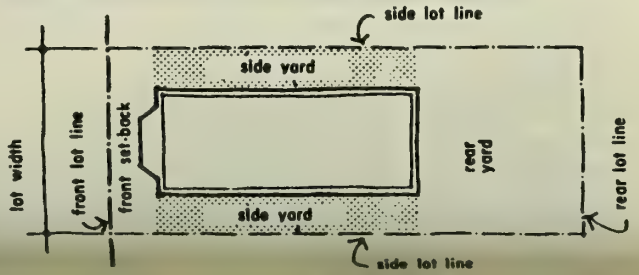
(e) **Limitations.** No transfer of permitted gross floor area shall serve to increase the total gross floor area permitted under this Code on the adjacent lot and the transferee lot taken together, either presently or prospectively. No building permit application shall be approved by the Department of City Planning at any time, nor shall any building permit be issued by any City department at any time, if the result of such approval or issuance would be to increase the total permitted gross floor area of both such lots taken together above such total as calculated on the basis of the floor area ratio limits prevailing at that time for such lots.

(f) **Completed transfers.** Any transfer of permitted gross floor area completed prior to the effective date of this section shall be effective notwithstanding the location of the transferee lot outside the C-3-O district and notwithstanding the aggregate transfer of more than one-half the gross floor area permitted on the adjacent lot under the basic floor area ratio limit, provided all other conditions of this section have been met.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 130. YARD AND SET-BACK REQUIREMENTS, GENERAL. (a) Except as provided in Sections 172 and 188 of this Code, every building and addition shall have yards and set-backs as required by Sections 131 through 134 for the district in which the building is located.

(b) Every such front set-back and rear yard shall extend along a lot line the full width of the lot. Every such side yard shall extend along a lot line from the front set-back or the front lot line to the rear yard. The required minimum depth or width of any yard or set-back shall be measured generally at right angles to the lot line. All required yards and set-backs shall be located on the lot on which the building is situated.



(c) Where a lot abuts on two or more streets, any street lot line may be elected by the owner as the front lot line for purposes of the yard and set-back requirements, and in general the lot line opposite and most nearly parallel thereto shall be the rear lot line. Any street lot line that is not a front lot line shall be a rear lot line or a side lot line.

(d) Where the side lot lines converge to a point, a line five feet long within the lot parallel to and at a maximum distance from the front lot line shall be deemed to be the rear lot line for the purpose of determining the depth of the rear yard.

(e) Where the building wall is not parallel to a side or a rear lot line the required least dimension of the side yard or the rear yard along such line may be applied to the average, provided that no such side yard shall be less than three feet in width at any point, and no such rear yard shall be less than five feet in depth at any point.

(f) Obstructions in any required yard or set-back shall be limited to those specified in Section 136 of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 131. LEGISLATED SET-BACK LINES. (a) The legislated set-back lines along specific street and alley frontages established by ordinance and resolution pursuant to former Article 4 of the City Planning Code and earlier provisions of law are hereby continued in effect as regulations of the City Planning Code, regardless of the regulations for the use districts in which such street and alley frontages are located, and said ordinances and resolutions are expressly incorporated herein by reference as though fully set forth.

(b) The obstructions permitted within such legislated set-back lines shall be as described in Sections 132 and 136 of this Code. No other obstruction shall be constructed, placed or maintained within a legislated set-back line.

(c) The procedures for establishment, abolition or modification of a legislated set-back line shall be as specified in Sections 302 and 306 through 306.5 for amendments to this Code.

(d) In case of any conflict between the requirements of a legislated set-back line and a front set-back area established by Section 132 of this Code, the more restrictive requirements shall prevail.

(Added Ord. 443-78, Approved 10/6/78)

SEC. 132. FRONT SET-BACK AREAS, RH AND RM DISTRICTS. The following requirements for minimum front set-back areas shall apply to every building in all RH and RM districts, in order to relate the set-backs provided to the existing front set-backs of adjacent buildings.

(a) **Basic requirement.** Where one or both of the buildings adjacent to the subject property have front set-backs along a street or alley, any building or addition constructed, reconstructed or relocated on the subject property shall be set back to the average of the two adjacent front set-backs. If only one of the adjacent buildings has a front set-back, or if there is only

	RH-1(D)	RH-1	RH-1(S)	RH-2	RH-3	RM-1	RM-2	RM-3	RM-4	RC-1	RC-2	RC-3	RC-4
mitted as a principal use in a C-1 district, which is located in a building above the ground story; excluding any establishment designed primarily for customers arriving at that establishment by private motor vehicle.											P	P	P
(c) Retail, personal service or other commercial establishment permitted as a principal use in a C-2 district, which is located within or below the ground story of a building; excluding any establishment designed primarily for customers arriving at that establishment by private motor vehicle.											C	C	C
(d) Retail, personal service or other commercial establishment permitted as a principal use in a C-2 district, which is located in a building above the ground story; excluding any establishment designed primarily for customers arriving at that establishment by private motor vehicle. *(Added Ord. 443-78, Approved 10/6/78)*													
Sec. 209.9. Other Uses.													
(a) Sale or lease sign, as defined and regulated by Article 6 of this Code.	P	P	P	P	P	P	P	P	P	P	P	P	P
(b) Planned Unit Development, as defined and regulated by Section 304 and other applicable provisions of this Code.	C	C	C	C	C	C	C	C	C	C	C	C	C
(c) Temporary uses, as specified in and regulated by Sections 205 through 205.2 of this Code.	SEE SECTIONS 205 THROUGH 205.2												
(d) Any use as specified in, and regulated by, Sections 209.3(d),(f),(g),(h),(j); 209.4(a),(b); or 209.5(c) of this Code, when located in or below the ground story of a building and not above the ground story.										P	P	P	P
(e) Any use listed as a principal or conditional use permitted in a C-1 or C-2 district, when located in a structure on a landmark site designated pursuant to Article 10 of this Code. *(Added Ord. 443-78, Approved 10/6/78)*	C	C	C	C	C	C	C	C	C	C	C	C	C

SEC. 210. DESCRIPTION AND PURPOSE OF COMMERCIAL AND INDUSTRIAL DISTRICTS. The following statements of description and purpose outline the main functions of the C (Commercial) and M (Industrial) districts in the zoning plan for San Francisco, supplementing the statements of purpose contained in Section 101 of this Code. The emphasis, in the case of these districts, is upon the allocation of adequate areas in proper locations for the carrying on of business and industry to serve city, regional and national needs and provide San Francisco with a sound and growing economic base.
(Amended Ord. 136-68, Approved 5-29-68)

Sec. 210.1. C-1 Districts: Neighborhood Shopping. These districts are intended for the supplying of retail goods and personal services at convenient locations to meet the frequent and recurring needs of nearby residents. These districts are usually surrounded by residential areas of relatively low density of development, often in outlying areas of the city, and the size and use of commercial buildings in these districts are intended to be consistent with those residential densities. Close concentrations of complementary commercial uses are encouraged, with minimum interruption by open uses and non-retail enterprises.
(Amended Ord. 136-68, Approved 5-29-68)

Sec. 210.2. C-2 Districts: Community Business. These districts serve several functions. On a larger scale than the C-1 districts, they provide convenience goods and services to residential areas of the city, both in outlying sections and in closer-in, more densely built communities. In addition, some C-2 districts provide comparison shopping goods and services on a general or specialized basis to a city-wide or a regional market area, complementing the main area for such types of trade in downtown San Francisco. The extent of these districts varies from smaller clusters of stores to larger concentrated areas, including both shopping centers and strip developments along major thoroughfares, and in each case the character and intensity of commercial development are intended to be consistent with the character of other uses in the adjacent areas. As in C-1 districts, the emphasis is upon compatible retail uses, but a wider variety of goods and services is included to suit the longer term needs of customers and a greater latitude is given for the provision of automobile-oriented uses.
(Amended Ord. 136-68, Approved 5-29-68)

Sec. 210.3. C-3 Districts: Downtown Commercial. Downtown San Francisco, a center for city, regional, national and

international commerce, is composed of four separate districts, as follows:

C-3-O District: Downtown Office.

This district, playing a leading national role in finance, corporate headquarters and service industries, and serving as an employment center for the region, consists primarily of high quality office development. The intensity of building development is the greatest in the city, resulting in a notable skyline symbolizing the area's strength and vitality. The district is served by city and regional transit reaching its central portions and by automobile parking at peripheral locations. Intensity and compactness permit face-to-face business contacts to be made conveniently by travel on foot. Office development is supported by some related retail and service uses within the area, with unrelated uses excluded in order to conserve the supply of land in the core and its expansion areas for further development of major office buildings. Certain desirable building features are encouraged by means of development bonuses.

C-3-R District: Downtown Retail.

This district is a regional center for comparison shopper retailing and direct consumer services. It covers a compact area with a distinctive urban character, consists of uses with cumulative customer attraction and compatibility, and is easily traversed by foot. Like the adjacent Downtown Office district, this district is well served by city and regional transit, with automobile parking best located at its periphery. Within the district, continuity of retail and consumer service uses is emphasized, with encouragement of pedestrian interest and amenities and minimization of conflicts between shoppers and motor vehicles. A further merging of this district with adjacent, related districts is anticipated, partially through development of buildings which combine retailing with other functions.

C-3-G District: Downtown General Commercial.

This district covers the northern and western portions of downtown and is composed of a variety of uses: retail, offices, hotels, entertainment, clubs and institutions, and high-density residential. Many of these uses have a city-wide or regional function, although the intensity of development is lower here than in the downtown core area. As in the case of other downtown districts, no off-street parking is required for individual commercial buildings, but in portions of this district automobile parking is a major land use, serving this district and the adjacent office and retail core areas. In the vicinity of Market Street, the configuration of this district reflects easy accessibility by rapid transit.

C-3-S District: Downtown Support.

This district exists primarily to accommodate near the intensive downtown core areas important supporting functions such as wholesaling, printing, building services and parking. Motor vehicle access from freeway ramps to this district is good, and truck and automobile traffic is heavy; at the same time, the district is within walking distance of rapid transit or

B.1.7

Market Street. In its eastern portion, the district also serves in part as an expansion area for offices, at a lesser intensity than in the Downtown Office district. The district has for the most part been underdeveloped in the past, and opportunities exist for major developments of new uses covering substantial areas.

(Added Ord. 136-68, Approved 5-29-68)

Sec. 210.4. C-M Districts: Heavy Commercial. These districts provide a limited supply of land for certain heavy commercial uses not permitted in other commercial districts. There is an emphasis upon wholesaling and business services, and some light manufacturing and processing are also permitted though limited in most cases to less than an entire building. In recognition of the potentially adverse effects of these heavy uses and the proximity of these districts to residential and other commercial areas, standards are imposed as to enclosure within buildings and screening of outdoor uses.

(Added Ord. 136-68, Approved 5-29-68)

Sec. 210.5. M-1 Districts: Light Industrial. These are one of two types of districts providing land for industrial development. In general, the M-1 districts are more suitable for smaller industries dependent upon truck transportation, while the M-2 districts are more suitable for larger industries served by rail and water transportation and by large utility lines. In M-1 districts, most industries are permitted, but some with particularly noxious characteristics are excluded. The permitted industries have certain requirements as to enclosure, screening and minimum distance from Residential districts.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 210.6. M-2 Districts; Heavy Industrial. These districts are the least restricted as to use and are located at the eastern edge of the city, separated from residential and commercial areas. The heavier industries are permitted, with fewer requirements as to screening and enclosure than in M-1 districts, but many of these uses are permitted only as conditional uses or at a considerable distance from Residential districts.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 212. ADDITIONAL REQUIREMENTS FOR USES IN CERTAIN C AND M DISTRICTS. In the following C and M districts, the permitted uses indicated in Sections 215 through 227 shall be subject to the additional requirements contained in this Section 212.

(a) In C-1 and C-2 districts, all permitted uses, and all storage, servicing, fabricating, processing or repair uses accessory thereto, shall be conducted within enclosed buildings, with the exceptions of those uses indicated by an asterisk (*) in the column for the district, and with the exception, also, of the following accessory uses where permitted:

1. Accessory off-street parking and loading areas.
2. Accessory outdoor dining areas.
3. Accessory recreation areas.

(b) In C-1, C-3-O, C-3-R and C-3-G districts, no permitted use shall include an establishment of the "drive-in" type, serving customers waiting in parked motor vehicles, with the exception of automobile service stations and automobile washes where permitted.

(c) In the C-3-R district, along any block frontage that is entirely within such district or partly in such district and partly in the C-3-O district, where such block frontage faces a street 40 feet or more in width, the following requirements shall apply to assure continuity of retail and consumer service uses:

1. Only those permitted uses listed in Sections 218 and 227 shall be located facing such street in the ground story of any building. At least one-half the total width of any new or reconstructed building, parallel to and facing such street, shall be devoted at the ground story to entrances, show windows or other displays of such uses.

2. All other permitted uses shall be located either on stories above or below the ground story or at a distance of not less than 20 feet behind the front of the building at the ground story. No more than one-third the width of any lot, parallel to and facing such street, shall be devoted to entrances to such other permitted uses.

(d) No use listed as permitted in any C district or M-1 district shall include any use that is hazardous, noxious or offensive for reasons described in Section 202(c) of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 213. USES PERMITTED IN C AND M DISTRICTS.

(a) The uses listed in Sections 215 through 227 are permitted in C and M districts as indicated by the following symbols in the respective columns for each district:

P: Permitted as a principal use in this district.

C: Subject to approval by the City Planning Commission as a conditional use in this district as provided in Section 303 of this Code.

NA: This listing not applicable to this district, as the same use is listed subsequently for the district with fewer restrictions.

Blank Space: Not permitted in this district.

(b) The section titles are intended only as an aid to use of this Code and are not binding as to interpretation of these sections. In general, but not in all cases, uses that are more widely permitted in C and M districts are listed in earlier sections. Uses listed in an earlier section shall not include any use first specifically listed in a later section. Where the same use is listed as permitted two or more times for the same district, with different restrictions, the permitted listing with the fewest restrictions shall prevail for that district.

(c) Determinations as to the classification of uses not specifically listed shall be made in the manner indicated in Sections 202 and 307(a) of this Code.

(d) Reference should be made to Sections 204 through 204.5 for regulations pertaining to accessory uses permitted for principal and conditional uses listed in Sections 215 through 227.

(e) Reference should also be made to the other Articles of this Code containing provisions relating to definitions, off-street parking and loading, dimensions, areas and open spaces, nonconforming uses, height and bulk districts, signs, historic preservation, and other factors affecting the development and alteration of properties in these use districts.

(Amended Ord. 443-78, Approved 10/6/78)

	C-1	C-2		C-3-O	C-3-R	C-3-G	C-3-S		C-M	M-1	M-2
SEC. 215. DWELLINGS.											
(a) Dwelling at a density ratio not exceeding the number of dwelling units permitted in the nearest R district, with the distance to such R district measured from the mid-point of the front lot line or from a point directly across the street therefrom, whichever permits the greater density; provided, that the maximum density ratio in a C-1, C-2, M-1 or M-2 district shall in no case be less than for an RM-1 district, the maximum density ratio in a C-3 or C-M district shall in no case be less than for an RM-4 district, and the maximum density ratio in a C-3 district shall in no case be less than one dwelling unit for each 125 square feet of lot area. The rules for calculation of dwelling unit densities set forth in Section 207.1 of this Code shall apply in C and M districts, except that any remaining fraction of one-half or more of the minimum amount of lot area per dwelling unit shall be adjusted upward to the next higher whole number of dwelling units.	P	P		P	P	P	C		C	C	C
(b) Mobile home park for house trailers, motor homes, campers and similar vehicles or structures used for dwelling purposes. Each vehicle or structure in any such park shall be regulated by this Code in the same manner as a dwelling unit. *(Amended Ord. 443-78, Approved 10/6/78)*									C	C	C
SEC. 216. OTHER HOUSING.											
(a) Group housing, providing lodging or both meals and lodging, without individual cooking facilities, by prearrangement for a week or more at a time, in a space not defined by this Code as a dwelling unit. Such group housing shall	P	P		P	P	P	C		C	C	C

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
include but not necessarily be limited to a boarding house, guest house, rooming house, lodging house, residence club, commune, fraternity or sorority house, monastery, nunnery, convent or ashram. It shall also include group housing affiliated with and operated by a medical or educational institution, when not located on the same lot as such institution, which shall meet the applicable provisions of Section 304.5 of this Code concerning institutional master plans. The density limitations for all group housing described in this subsection shall be based upon the density limitations for group housing in the nearest R district, following the same rules as those set forth in Section 215(a) of this Code for dwelling unit densities in C and M districts.									
(b) Hotel, inn or hostel containing rooms or suites of rooms, none with individual cooking facilities, which are offered for compensation and are primarily for the accommodation of transient overnight guests. A hotel, inn or hostel shall not include a motel as described in Subsection 216(c) below.	P	P	P	P	P	P	P	C	C
(c) Motel, including an auto court, motor lodge, tourist court or other facility similarly identified, containing rooms or suites of rooms, none with individual cooking facilities, which are offered for compensation and are primarily for the accommodation of transient guests traveling by automobile, and where each sleeping unit is independently accessible from the outside; provided, that the entrance to such motel is within 200 feet of and immediately accessible from a major thoroughfare as designated in the Master Plan.	P	NA			NA	NA	NA	NA	NA
(d) Motel, as described in Subsection 216(c) above but without restriction as to location of its entrance.		P			P	P	P	C	C

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 217. INSTITUTIONS.

(a) Hospital, medical center or other medical institution which includes facilities for in-patient care and may also include medical offices, clinics, laboratories, and employee or student dormi-	C	C	C	C	C	C	C	C	

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
and affiliated with the institution, which institution has met the applicable provisions of Section 304.5 of this Code concerning institutional master plans.									
(b) Residential care facility providing lodging, board and care for a period of 24 hours or more to persons in need of specialized aid by personnel licensed by the State of California. Such facilities shall include but not necessarily be limited to a board and care home, family care home, long-term nursery, orphanage, rest home or home for the treatment of addictive, contagious or other diseases or psychological disorders.	P	P	P	P	P	C	P	P	
(c) Clinic primarily providing outpatient care in medical, psychiatric or other healing arts and not a part of a medical institution as specified in Subsection 217(a) above.	P	P	P	P	P	P	P	P	P
(d) Philanthropic facility providing assistance of a charitable or public service nature.	P	P	P	P	P	P	P	P	P
(e) Child care facility providing less than 24-hour care for children by licensed personnel and meeting the open-space and other requirements of the State of California and other authorities.	P	P	P	P	P	C	P	P	
(f) Elementary school, either public or private. Such institution may include employee or student dormitories and other housing operated by and affiliated with the institution.	P	P	P	P	P	P	P	P	
(g) Secondary school, either public or private, other than a school having industrial arts as its primary course of study. Such institution may include employee or student dormitories and other housing operated by and affiliated with the institution.	P	P	P	P	P	P	P	P	
(h) Post-secondary educational institution for the purposes of academic, professional, business or fine-arts education, which institution has met the applicable provisions of Section 304.5 of this Code concerning institutional master plans. Such institution may include employee or student dormitories and other housing operated by and affiliated with the institution. Such institution shall not have industrial arts as its primary	P	P	P	P	P	P	P	P	

B.1.9

	C-1	C-2	C-3-	C-3-	C-3-	C-3-	C-M	M-1	M-2
(i) Secondary or post-secondary educational institution, other than as specified in Subsection 217(g) and (h) above.						P	P	P	P
(j) Church or other religious institution. Such institution may include, on the same lot, the housing of persons who engage in supportive activity for the institution. *(Amended Ord. 443-78, Approved 10/6/78)*	P	P	P	P	P	P	P	P	P
SEC. 218. RETAIL SALES AND PERSONAL SERVICES. The uses specified in this section shall not include any use first specifically listed in a subsequent section of this Code.									
(a) Retail business or personal service establishment, of a type which supplies new commodities or offers personal services primarily to residents in the immediate vicinity.	P	NA	NA	NA	NA	NA	NA	NA	NA
(b) Retail business or personal service establishment, not limited to sales or services primarily for residents in the immediate vicinity, and not restricted to sale of new commodities. *(Added Ord. 136-68, Approved 5-29-68)*		P	P	P	P	P	P	P	P
SEC. 219. OFFICES.									
(a) Professional offices.	P	P	P	P	P	P	P	P	P
(b) Business offices. *(Added Ord. 136-68, Approved 5-29-68)*	P	P	P	P	P	P	P	P	P
SEC. 220. LAUNDERING, CLEANING AND PRESSING.									
(a) Automatic laundry, as defined in Part II, Chapter V (Health Code) of the San Francisco Municipal Code.	P	P	P	P	P	P	P	P	P
(b) Establishment for hand ironing only, not employing more than five persons.		P	P	P	P	P	P	NA	NA
(c) Dry cleaning establishment, including pressing and other miscellaneous processing of clothes, where no portion of a building occupied by such use shall have any ventilating flue, exhaust pipe or other opening except fixed windows and exits required by law within 50 feet of any lot in any R district, and where:	P	NA	NA	NA	NA	NA	NA	NA	NA
1. The establishment has only a central cleaning unit with a rated load factor of no more than 40 pounds and operated by employees of the establishment; or,									
2. The dry cleaning is done by the customer using self-service cleaning units or equivalent equipment, where the total number of units does not exceed eight and their total aggregate capacity does not exceed 40 cubic feet; or,									
3. The establishment is a combination of the two foregoing types, with a central cleaning unit with a rated load factor of no more than 40 pounds, and no more than four self-service units the aggregate capacity of which shall not exceed 20 cubic feet.									
(d) Dry cleaning establishment, including pressing and other miscellaneous processing of clothes, where no portion of a building occupied by such use shall have any ventilating flue, exhaust pipe or other opening except fixed windows and exits required by law within 50 feet of any lot in any R district, and where:		P	P	P	P	P	P	NA	NA
1. The establishment has only a central cleaning unit with a rated load factor of no more than 60 pounds and operated by employees of the establishment; or,									
2. The dry cleaning is done by the customer using self-service cleaning units or equivalent equipment where the total number of units does not exceed 16 and their total aggregate capacity does not exceed 80 cubic feet; or,									
3. The establishment is a combination of the two foregoing types, with a central cleaning unit with a rated load factor of no more than 60 pounds, and no more than eight self-service units the aggregate capacity of which shall not exceed 40 cubic feet.									
(e) Steam laundry, when conducted within a completely enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 50 feet of any R district.								P	P
(f) Cleaning or dyeing plant, when conducted within a completely enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits								P	P

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S		C-M	M-1	M-2
required by law, within 50 feet of any R district.										
(g) Bag, carpet or rug cleaning, when conducted within a completely enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 50 feet of any R district. *(Added Ord. 136-68, Approved 5-29-68)*									P	P
SEC. 221. ASSEMBLY AND ENTERTAINMENT.										
(a) Club house.	P	P	P	P	P	P		P	P	P
(b) Lodge building.	P	P	P	P	P	P		P	P	P
(c) Meeting hall.	P	P	P	P	P	P		P	P	P
(d) Theatre, except as specified under Subsection (k), below.		P	P	P	P	P		P	P	P
(e) Recreation building.	P	P	P	P	P	P		P	P	P
(f) Amusement enterprise, including billiard hall, dance hall, night club, bowling alley, skating rink, shooting gallery, when conducted within a completely enclosed building; provided, (1) that incidental noise is reasonably confined to the premises by adequate sound-proofing or other device, and (2) that no portion of a building occupied by such use shall have any opening, other than fixed windows and exits required by law, within 50 feet of any R district.		P	P	P	P	P		P	P	P
(g) Private non-commercial recreational open use.	P*	P*			P	P		P	P	P
(h) Amusement park, and related commercial amusement enterprises not conducted in completely enclosed buildings; provided, that the use lawfully existed at the effective date of this Code, or is so located that (1) the premises are not less than 200 feet from any R district, and (2) the aggregate area in the same or adjoining blocks occupied by existing amusement enterprises is in excess of five acres.		P*						NA	NA	NA
(i) Commercial open-air sports stadium or arena, if conducted on premises not less than 200 feet from any R district.						C		P	P	P
(j) Circus, carnival, or other amuse-						C		P	P	P

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S		C-M	M-1	M-2
ment enterprise not conducted within a building, if conducted on premises not less than 200 feet from any R district.										
(k) Adult entertainment enterprise, as specified in (i), (ii) and (iii) below, provided that the use is so located that the premises upon which it is conducted are not less than 1,000 feet from the premises of any other adult entertainment enterprise: (i) Adult bookstore, as defined by Section 791 of Part II, Chapter VIII of the San Francisco Municipal Code (Police Code); (ii) Adult theater, as defined by Section 791 of Part II, Chapter VIII of the San Francisco Municipal Code (Police Code); (iii) Encounter studios, as defined by Section 1072.1 of Part II, Chapter VIII of the San Francisco Municipal Code (Police Code). *(Amended Ord. 3-79, Approved 1/5/79)*	P	P	P	P	P	P		P	P	P
SEC. 222. HOME AND BUSINESS SERVICES. The term "shop" as used in this section shall include only the establishments of artisans dealing at retail directly with the consumer and concerned primarily with custom trade.										
(a) Household repair shop.		P	P	P	P	P		P	P	P
(b) Interior decorating shop.		P	P	P	P	P		P	P	P
(c) Upholstering shop.		P	P	P	P	P		P	P	P
(d) Sign painting shop.		P	P	P	P	P		P	P	P
(e) Carpenter shop.		P			P	P		P	P	P
(f) Office of a building, plumbing, electrical, painting, roofing, furnace or pest control contractor, including storage of incidental equipment and supplies entirely within the same building, where provision is also made entirely within the structure for parking, loading and unloading of all vehicles used. (See also Section 225.)		P			P	P		P	P	P
(g) Catering establishment.		P	P	P	P	P		P	P	P
(h) Printing shop.		P	P	P	P	P		P	P	P
(i) Newspaper publication.		P	P	P	P	P		P	P	P
(j) Blueprinting shop. *(Added Ord. 136-68, Approved 5-29-68)*		P	P	P	P	P		P	P	P
SEC. 223. AUTOMOTIVE.										
(a) Sale or rental of new or used au-		P	P	P	P	P		P	P	P

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
tomobiles, when conducted entirely within an enclosed building.									
(b) Sale or rental of new or used trucks, when conducted entirely within an enclosed building.		P			P	P	P	P	P
(c) Lot for sale or rental of new or used automobiles.		C*			C	C	P	P	P
(d) Lot for sale or rental of new or used trucks.		C*			C	C	P	P	P
(e) Sale or rental of new or used automobile trailers.		C*			C	C	P	P	P
(f) Automobile service station for the sale and dispensing of gasoline, other motor fuels and lubricating oil directly into motor vehicles. The following activities shall be permitted at such a service station if normally conducted entirely within an enclosed building having no openings other than fixed windows or exits required by law within 50 feet of any R district:	P*	NA			NA	NA	NA	NA	NA
1. The sale and dispensing of greases and brake fluids, including motor vehicle lubrication; and the sale or installation of tires, batteries and other accessories;									
2. Miscellaneous minor servicing and adjusting, which may include brakes, electrical equipment, fan belt, head lamps, spark plugs, air filter, distributor points, carburetor, and generator charging rate;									
3. Installation of lamp globes, spark plugs, oil filter or filtering element, windshield wiper blades and motors, radiator hose (without removal of radiator or water pump), battery cables and fan belt;									
4. The servicing and repairing of tires and batteries;									
5. The installation and servicing of smog control devices; and									
6. Automobile washing and polishing of an incidental nature, when performed primarily by hand and not including the use of any mechanical conveyor, blower or steam cleaning device.									
(g) Automobile service station as described above, with the following minor automobile repairs permitted therewith if conducted entirely within an enclosed building having no openings other than fixed windows or exits required by law within 50 feet of any R district:		P*			P	P	P	P	P
1. Tuneup, including the repair or replacement of distributors, spark plugs and carburetors;									
2. Brake repair;									
3. Shock absorber replacement;									
4. Muffler exchange, with no open flame or torch;									
5. Wheel balancing and alignment;									
6. Wheel bearing and seals replacement;									
7. Replacement of universal joints;									
8. Radiator mounting and dismounting, with repairs done elsewhere;									
9. Clutch adjustments;									
10. Repair or replacement of water pumps;									
11. Repair or replacement of generators, alternators and voltage regulators;									
12. Repair or replacement of starters;									
13. Repair or replacement of fuel pumps;									
14. Such other repairs as may be designated by the Chief of the San Francisco Fire Department as minor repairs under Paragraph 8.09(a)(5)(o) of Part II, Chapter IV (Fire Code) of the San Francisco Municipal Code.									
(h) Repair garage for minor automobile repairs, limited to those repairs and other activities permitted at an automobile service station as described above, and in addition the following minor automobile repairs; all such repairs and other activities shall be conducted entirely within an enclosed building having no openings other than fixed windows or exits required by law within 50 feet of any R district.		P			P	P	P	P	P
1. Body and fender repair limited to replacement of parts and spot paint spraying; and									

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
2. Removal and replacement of engines, transmissions and differentials, with repairs to these components done elsewhere.									
(i) Repair garage for the following major automobile repairs, if conducted entirely within an enclosed building having no openings other than fixed windows or exits required by law within 50 feet of any R district:						P		P	P
1. Internal engine repair or rebuilding;									
2. Repair or rebuilding of transmissions, differentials or radiators;									
3. Reconditioning of badly worn or damaged motor vehicles or trailers;									
4. Collision service, including body, frame or fender straightening or repair; and									
5. Full body paint spraying.									
(j) Automobile wash, when providing on the premises a reservoir of vehicle storage and standing area, outside the washing facilities, equal to at least ¼ the hourly capacity in vehicles of such facilities; provided, (1) that incidental noise is reasonably confined to the premises by adequate soundproofing or other device, and (2) that complete enclosure within a building may be required as a condition of approval, notwithstanding any other provision of this Code; but the foregoing provisions shall not preclude the imposition of any additional conditions pursuant to Section 303 of this Code.		C*			C	C	C	P	P
(k) Tire recapping, if conducted on premises not less than 200 feet from any R district.						P	P	P	P
(l) Parking lot, as regulated in Sections 155, 156 and 157 and other provisions of Article 1.5 of this Code.	C*	P*	C	C	C	P	P	P	P
(m) Storage garage open to the public for passenger automobiles, as regulated in Sections 155, 156 and 157 and other provisions of Article 1.5 of this Code, where such storage garage is not a public building requiring approval by the Board of Supervisors under other provisions of law and is completely enclosed.	C	P	C	C	C	C	P	P	P

B.1.13

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
(n) Storage garage open to the public for passenger automobiles, as regulated in Sections 155, 156 and 157 and other provisions of Article 1.5 of this Code, where such storage garage is not a public building requiring approval by the Board of Supervisors under other provisions of law and is not completely enclosed.	C*	C*	C	C	C	C	P	P	P
(o) Storage garage open to the public for passenger automobiles, as regulated in Sections 155, 156 and 157 and other provisions of Article 1.5 of this Code, where such storage garage is a public building requiring approval by the Board of Supervisors under other provisions of law.	P*	P*	P	P	P	P	P	P	P
(p) Major (non-accessory) parking garage not open to the public, as defined in Section 158 and as regulated therein and in Sections 155 and 157 and other provisions of Article 1.5 of this Code.	C	P	C	C	C	C	P	P	P
(q) Parcel delivery service, limited to facilities for the unloading, sorting and reloading of local retail merchandise for home deliveries, where the operation is conducted entirely within a completely enclosed building; including garage facilities for local delivery trucks, but excluding repair shop facilities.		C	C	C	C	NA	NA	NA	NA
(r) Parcel delivery service, not subject to the above limitations.						P	P	P	P
(s) Ambulance service.		C			C	P	P	P	P
(t) Storage garage for commercial passenger vehicles and light delivery trucks.					C	P	P	P	P
(u) Storage yard for commercial vehicles or trucks, if conducted within an area completely enclosed by a wall or concealing fence not less than six feet high.						C	P	P	P
(v) Truck terminal facility, if located not less than 200 feet from any R District.								C	C

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 224. ANIMAL SERVICES.

(a) Animal hospital or clinic, if conducted entirely within an enclosed building; not including a commercial kennel as specified below.		C			C	C	C	P	P

	C-1	C-2	C-3	C-3	C-3	C-3	C-M	M-1	M-2
(b) Animal hospital or clinic, if conducted on premises not less than 200 feet from any R district.							P	P	P
(c) Commercial kennel, if conducted on premises not less than 200 feet from any R district. A commercial kennel shall mean any commercial or business premises or other premises where dogs are boarded for compensation or are cared for or trained for hire or are kept for sale or bred for sale, where the care, breeding or sale of the dogs is the principal means of livelihood of the occupants of the premises.							P	P	P
(d) Riding academy or livery stable, if conducted on premises not less than 200 feet from any R district.							P	P	P
(Added Ord. 136-68, Approved 5-29-68)									
SEC. 225. WHOLESALING, STORAGE, DISTRIBUTION AND OPEN-AIR HANDLING OF MATERIALS AND EQUIPMENT.									
(a) Storage building for household goods.		C		C	C	P	P	P	P
(b) Wholesale establishment when conducted entirely within an enclosed building, not including a storage warehouse.			P	P	P	P	P	P	P
(c) Wholesale storage warehouse, except for storage of inflammables.						P	P	P	P
(d) Bulk storage of inflammable or highly combustible materials.									P
(e) Bulk storage of explosives.									C
(f) Cold storage plant, when conducted within a completely enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 50 feet of any R district.								P	P
(g) Grain elevator.									P
(h) Dairy products distribution plant, where provision is made for off-street parking of all vehicles used, and all operations including loading and unloading are conducted entirely within an enclosed building. (See also Section 226.)						C	C	NA	NA
(i) Lot for sale of new or used merchandise, not including any use first specifically listed below.							P	P	P

	C	C	C	C	C	C	M	M	M
(j) Service yard for public utility, or public use of a similar character, if conducted entirely within an area completely enclosed by a wall or concealing fence not less than six feet high.								P	P	P
(k) Contractor's storage yard or yard for rental of contractors' equipment if conducted within an area enclosed by a wall or concealing fence not less than six feet high.									P	P
(l) Yard for storage or sale of building materials or lumber, livestock feed, or coal, if conducted within an area enclosed by a wall or concealing fence not less than six feet high.									P	P
(m) Stone or monument yard, if conducted within an area enclosed by a wall or concealing fence not less than six feet high.									P	P
(n) Storage within a completely enclosed building of junk, waste, second hand, discarded or salvaged materials, excluding automobile wrecking operations as defined in this Section 225; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 50 feet of any R district.									P	P
(o) Junk yard, which shall mean an outdoor space where junk, waste, discarded or salvaged materials are stored or handled, including house wrecking yards, used lumber yards and places or yards for storage of salvaged house wrecking and structural steel materials and equipment; excluding automobile wrecking operations as defined in this Section 225, yards or establishments for the sale, purchase or storage of used cars or machinery in operable condition, and the processing of used, discarded or salvaged materials as part of a permitted manufacturing operation in the same premises.										P
(p) Automobile wrecking operation; provided, (1) that there shall be sufficient working space on the property to permit proper functioning of the operation without use of any public right-of-way for storage of inoperable vehicles or parts, and (2) that the operation shall be clearly separated from adjacent prop-									C	C

	C-1	C-2	C-3-O	C-3-R	C-3-G	C-3-S	C-M	M-1	M-2
erties and public rights-of-way. No automobile wrecking operation lawfully existing at the effective date hereof shall be continued more than three years from said date unless a conditional use authorization for such operation has been granted pursuant to this Code; provided, however, that no such automobile wrecking operation eligible for governmental payments to assist relocation shall be continued more than one and one-half years from said effective date unless a conditional use authorization for such operation has been granted pursuant to this Code. The term "automobile wrecking operation" as used herein shall mean the disassembling, dismantling, junking or "wrecking" of motor vehicles of any type, or the storage of such vehicles not in operable condition. *(Amended Ord. 239-69, Approved 7-29-69)*										
SEC. 226. MANUFACTURING AND PROCESSING.									
(a) Light manufacturing uses, involving only the assembly, packaging, repairing or processing of previously prepared materials, which are conducted within a building but do not occupy the ground story of any building; provided, (1) that no part of a building so occupied shall have any opening, other than fixed windows and exits required by law, within 50 feet of any R district; (2) that the mechanical equipment required for such uses, together with related floor space used primarily by the operators of such equipment, shall not in the aggregate occupy more than ¼ of the gross floor area of the building in which the uses are located; and (3) that no machine shall be used that has more than five horsepower capacity.			P	P	P	P	P	NA	NA
(b) Light manufacturing which occupies not more than ½ the ground story of the building and involves or requires no machine that has more than five horsepower capacity, if conducted entirely within an enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows and exits required by law, within 20 feet of any R district.						P	P	NA	NA
(c) Light food processing for delicatessen, catering or restaurant supply, if conducted entirely within an enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 20 feet of any R district.						P	P	NA	NA

	C-1	C-2	C-3-O	C-3-R	C-3-O	C-3-S	C-M	M-1	M-2
(d) Light manufacturing, not including any use first specifically listed below.								P	P
(e) Industrial or chemical research or testing laboratory, not involving any danger of explosions.			P	P	P	P	P	P	P
(f) Experimental laboratory.						C	C	P	P
(g) Battery manufacture, if conducted on premises not less than 200 feet from any R district.							P	P	P
(h) Any of the following uses, when conducted within a completely enclosed building; provided, that no part of a building so occupied shall have any opening, other than fixed windows or exits required by law, within 50 feet of any R district:								P	P
1. Automobile assembling;									
2. Bottling plant, brewery, dairy products plant, malt manufacturing or processing or malt products plant;									
3. Ice manufacturing plant;									
4. Concrete mixing, concrete products manufacture;									
5. Electric foundry or foundry for non-ferrous metals;									
6. Metal working or blacksmith shop; excluding presses of over 20 tons capacity and machine operated drop hammers;									
7. Enameling, lacquering, wholesale paint mixing from previously prepared pigments and vehicles;									
8. Woodworking mill, manufacture of wood-fibre, sawdust or excelsior products not involving chemical processing.									
(i) Manufacture of cereals, distilled liquors, felt or shoddy, hair or hair products, pickles, sauerkraut, vinegar, yeast, soda or soda compounds, structural clay products, meat products, not									P

B.1.15

| | | |

SEC. 234. P DISTRICTS. In addition to the use districts otherwise established by this Code, there shall also be in the city a Public Use District herein referred to as a P district, to apply to land that is owned by a governmental agency and in some form of public use, including open space. The purpose of designating such land as a P district on the Zoning Map is to relate the Zoning Map to actual land use and to the Master Plan with respect to such land. Any lot in a P district may be occupied by a principal use listed in Section 234.1, or by a conditional use listed in Section 234.2, subject to applicable regulations of this Code including the limitations of Section 290 for OS (Open Space) districts.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 234.1. Principal Uses Permitted, P Districts. (a) Structures and uses of governmental agencies not subject to regulation by this Code:

(b) Public structures and uses of the City and County of San Francisco, and of other governmental agencies that are subject to regulation by this Code, when in conformity with the Master Plan and the provisions of other applicable codes, laws, ordinances and regulations.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 234.2. Conditional Uses, P Districts. The following uses shall be subject to approval by the City Planning Commission, as provided in Section 303 of this Code:

(a) Those uses listed in Sections 209.3(d),(e),(f),(g),(h),(i),(j); 209.4(a); 209.5(a),(b); 209.6(b); and 209.9(c) of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 235. SPECIAL USE DISTRICTS. In addition to the use districts that are established by Section 201 of this Code, there shall also be in the city such special use districts as are established in this section and Sections 236-240.3, in order to carry out further the purposes of this Code. The designations, locations and boundaries of these special use districts shall be as provided in Sections 236-240.3 and as shown on the Zoning Map referred to in Section 105 of this Code, subject to the provisions of Section 105. The original of the numbered sectional maps of the Zoning Map for Special Use Districts referred to in Sections 236-240.3 is on file with the Clerk of the Board of Supervisors under File No. 191-67-2. In any special use district the provisions of the applicable use district established by Section 201 shall prevail, except as specifically provided in Sections 236-240.3. *(Amended Ord. 443-78, Approved 10/6/78)*

SEC. 236. GARMENT SHOP SPECIAL USE DISTRICT. In order to provide for garment shops of limited size in a recognized area of the city, there shall be a Garment Shop Special Use District as designated on Sectional Map No. 1 SU* of the Zoning Map. The following provisions shall apply within such special use district:

B.1.17

hand sewing machines and specialty machines, where the total number of such single-head machines does not exceed 25, shall be permitted as a principal use on any lot in a C district or Residential-Commercial Combined district therein at a location where commercial uses are permitted.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 237. AUTOMOTIVE SPECIAL USE DISTRICT. In order to provide for a major automotive area with a city-wide and regional market, there shall be an Automotive Special Use District as designated on Sectional Map No. 2 SU of the Zoning Map. The following provisions shall apply within such special use district:

(a) Wholesaling of automotive parts and any automotive use listed in Section 223 of this Code when connected with and incidental to the sale of new or used automobiles, shall be permitted as principal uses. In addition, any automotive use listed in Section 223 that is not connected with and incidental to the sale of automobiles, and not otherwise permitted, may be permitted as a conditional use by the City Planning Commission under Section 303 of this Code.

(b) The basic floor area ratio limit shall be 10.0 to 1, as provided in Section 124(d) of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 238. NOB HILL SPECIAL USE DISTRICT. In order to provide for an established area with a unique combination of uses and a special identity, there shall be a Nob Hill Special Use District as designated on Sectional Map No. 1 SU* of the Zoning Map. The following provisions shall apply within such special use district:

(a) A hotel, inn or hostel, as described in Section 209.2(e) of this Code, may be permitted by the City Planning Commission as a conditional use under Section 303 of this Code.

(b) In connection with any permitted principal or conditional use located in such special use district, incidental commercial uses may be permitted by the City Planning Commission as a conditional use under Section 303 of this Code, if designed primarily for occupants of and visitors to the use to which they are incidental, accessible to the general public only from within the building, and not identified outside the building by means of any sign or signs. *(Amended Ord. 443-78, Approved 10/6/78)*

SEC. 239. WASHINGTON-BROADWAY SPECIAL USE DISTRICTS. In order to provide for certain areas with special traffic and parking considerations, many existing buildings of small scale and established character which have been and will be retained and converted, and certain wholesaling activities carried on with distinct benefit to the city, there shall be two Washington-Broadway Special Use Districts, Numbers 1 and 2, as designated on Sectional Map No. 1 SU* of the Zoning Map. The following provisions shall apply within such special use

requirements, as provided in Section 161(d) of this Code.

(b) No permitted use shall include an establishment of the "drive-in" type, serving customers waiting in parked motor vehicles, with the exception of automobile service stations.

(c) A parking lot, or a storage garage open to the public for passenger automobiles if not a public building requiring approval by the Board of Supervisors under other provisions of law, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(d) In Washington-Broadway Special Use District Number 2 only, a wholesale establishment conducted entirely within an enclosed building shall be permitted as a principal use.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 240. NORTHERN WATERFRONT SPECIAL USE DISTRICTS. In order to provide for certain areas with unique natural and man-made physical characteristics, distinct maritime character, special traffic, parking and use considerations, recognized development potential, and proximity to residential, public and commercial areas of regional, national and international significance which should be protected from adverse adjacent development, there shall be three Northern Waterfront Special Use Districts, Numbers 1, 2 and 3, as designated on Sectional Map No. 1 SU" of the Zoning Map. The original copy of said Sectional Map with these Special Use Districts indicated thereon is on file with the Clerk of the Board of Supervisors under File No. 171-70-4. The provisions set forth in Sections 240.1 through 240.3 shall apply, respectively, within these Special Use Districts, and shall be applicable to all property, whether public or private, including property under the jurisdiction of the San Francisco Port Commission.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 240.1. Northern Waterfront Special Use District No. 1. The following provisions shall apply within Northern Waterfront Special Use District No. 1:

(a) Water-borne commerce and navigation, and industrial, commercial and other operations directly related to the conduct of water-borne commerce or navigation, shall be permitted as principal uses.

(b) Any use, other than those described in Subsection (a) of this section, which is listed in this Code as a permitted use in the use district established by Section 201 applicable to the particular property involved, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code. In considering any application in this Special Use District under Section 303, the City Planning Commission shall consider the following criteria in addition to those stated in Section 303(c):

1. Provision to the extent feasible, along the sea wall and along the perimeter of piers or platforms, of public access

open spaces available for public use and suitable for viewing purposes or water-oriented recreation;

2. Limitation of water coverage in the Northern Waterfront area from the Hyde Street Pier to Pier 46 so as not to exceed the degree of coverage by piers as existing at the effective date of this section,

3. Construction of new piers or platforms so that the water's edge shall be maintained at the sea wall where feasible;

4. Provision or maintenance of view corridors along streets into the Bay, and of panoramic views, in accordance with the Master Plan; and

5. Development over the water generally on piers or platforms rather than on fill.

(c) Off-street parking requirements may be modified by the City Planning Commission, as provided in Section 161(f) of this Code.

(d) The basic floor area ratio limit shall be 5.0 to 1 to the extent provided in Section 124(e) of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 240.2. Northern Waterfront Special Use District No. 2. The following provisions shall apply within Northern Waterfront Special Use District No. 2:

(a) Industrial, commercial and other operations directly related to the conduct of water-borne commerce or navigation shall be permitted as principal uses, except in Residential zoning districts.

(b) A hotel or motel, if otherwise listed in this Code as a permitted use, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(c) An automobile service station, if otherwise listed in this Code as a permitted use, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(d) Any building or use which provides a greater number of off-street parking spaces than required under Section 151 of this Code shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code; provided, however, that this subsection shall not apply in any case where fewer than 10 such spaces are provided.

(e) Any use, whether principal or accessory, not screened from view from adjacent streets and other public areas, with the exception of accessory off-street parking areas for nine or fewer automobiles, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(f) The basic floor area ratio limit shall be 5.0 to 1 to the extent provided in Section 124(e) of this Code.

(Amended Ord. 443-78, Approved 10/6/78)

Sec. 240.3. Northern Waterfront Special Use District No. 3. The following provisions shall apply within Northern Waterfront Special Use District No. 3:

(a) Industrial, commercial and other operations directly related to the conduct of water-borne commerce or navigation shall be permitted as principal uses.

(b) A wholesale establishment conducted entirely within an enclosed building shall be permitted as a principal use.

(c) Any development which includes an area (excluding the area of public streets and alleys) of at least three acres shall be permitted only upon approval by the City Planning Commission according to the procedures for conditional use approval in Section 303 of this Code. In considering any application for such a development under Section 303, the City Planning Commission shall consider the following criteria in addition to those stated in Section 303(c):

1. Conformance to The Plan for the Northeastern Waterfront, a part of the Master Plan, including streets and roadways as indicated therein;

2. Assurance of a general profile for development having higher portions near Telegraph Hill and lower portions near The Embarcadero;

3. Assurance of view corridors between Telegraph Hill and the waterfront and Bay;

4. Provision of open spaces available to the public; and

5. Adherence to a character of small-scale development, in keeping with the character of nearby areas of the city.

(d) A hotel or motel, if otherwise listed in this Code as a permitted use, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(e) An automobile service station, if otherwise listed in this Code as a permitted use, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(f) Any building or use which provides a greater number of off-street parking spaces than required under Section 151 of this Code shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code; provided, however, that this subsection shall not apply in any case where fewer than 10 such spaces are provided.

(g) Any use, whether principal or accessory, not screened from view from adjacent streets and other public areas, with the exception of accessory off-street parking areas for nine or fewer automobiles, shall be permitted only upon approval by the City Planning Commission as a conditional use under Section 303 of this Code.

(h) The basic floor area ratio limit shall be 5.0 to 1 to the extent provided in Section 124(e) of this Code.

B.1.19

ARTICLE 2.5

HEIGHT AND BULK DISTRICTS

Sec. 250. Height and Bulk Districts Established.
Sec. 251. Height and Bulk Districts: Purposes.
Sec. 252. Classes of Height and Bulk Districts.
Sec. 253. Review of Proposed Buildings and Structures Exceeding a Height of 40 Feet in R Districts.
Sec. 260. Height Limits: Measurement.
Sec. 261. Additional Height Limits Applicable to Certain Use Districts.
Sec. 262. Additional Height Limits Applicable to Signs.
Sec. 263. Height Limits: Special Exceptions.
Sec. 263.1. Special Exceptions: Southern Edge of Jackson Square.
Sec. 263.2. Special Exceptions: North of Ferry Building.
Sec. 263.3. Special Exceptions: South of Ferry Building.
Sec. 270. Bulk Limits: Measurement.
Sec. 271. Bulk Limits: Special Exceptions.
Sec. 290. Height and Bulk Limits for Open Space Districts.

(THE DIAGRAMS IN THIS ARTICLE ARE ILLUSTRATIVE ONLY, AND NOT A PART OF THE ADOPTED ORDINANCE.)

SEC. 250. HEIGHT AND BULK DISTRICTS ESTABLISHED. (a) In order to carry out further the purposes of this Code, height and bulk districts are hereby established, subject to the provisions of this Article 2.5.

(b) No building or structure or part thereof shall be permitted to exceed, except as stated in Sections 172 and 188 of this Code, the height and bulk limits set forth in this Article for the district in which it is located, including the height limits for use districts set forth in Section 261.

(c) The establishment of these height and bulk districts and the repeal and replacement of special height districts or height limits previously in effect in the city shall in no way be deemed to confer legal noncomplying status upon any building or structure constructed, reconstructed, enlarged, altered or relocated in violation of the height districts or limits previously in effect.

(d) In the case of any apparent inconsistency among requirements of this Code applicable to the same property or development, including but not limited to standards for height, bulk, floor area ratio, set-backs, yards, usable open space and dwelling unit density, the most restrictive of such requirements shall prevail.

(e) The provisions of this Article 2.5 shall apply to all proper-

ties and developments, both public and private, including those of the City and County of San Francisco.

(f) The requirements of height and bulk districts established by this Article 2.5 shall not apply to buildings and structures on sites for which a redeveloper had been formally selected by the Redevelopment Agency of the City prior to August 26, 1971, for development in a Redevelopment Project Area in accordance with an agreement that specifically committed the City to a height or bulk configuration not consistent with the provisions of this Article for height and bulk districts.

(Amended Ord. 443-78, Approved 10/6/78)

SEC. 251. HEIGHT AND BULK DISTRICTS: PURPOSES. In addition to the purposes of this Code as stated in Section 101, these height and bulk districts are established for further purposes of implementing the Urban Design element and other elements of the Master Plan, according to the objectives, principles and policies stated therein. Among these purposes are the following:

(a) Relating of the height of buildings to important attributes of the city pattern and to the height and character of existing development;

(b) Relating of the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction;

(c) Promotion of building forms that will respect and improve the integrity of open spaces and other public areas;

(d) Promotion of harmony in the visual relationships and transitions between new and older buildings;

(e) Protection and improvement of important city resources and of the neighborhood environment;

(f) Conservation of natural areas and other open spaces; and

(g) Direction of new development to locations that are appropriate in terms of land use and transportation.

(Amended Ord. 234-72, Approved 8-18-72)

SEC. 252. CLASSES OF HEIGHT AND BULK DISTRICTS. The City is hereby divided into classes of height and bulk districts as indicated on the Zoning Map and in this Article 2.5. The original of the sectional maps establishing said districts is on file with the Clerk of the Board of Supervisors under File No. 362-72-2. The height limits for each such district are specified on said map by numerical designations in feet, and the bulk limits are designated thereon by letter symbols referring to the limitations upon the plan dimensions of buildings and structures set forth in Section 270 of this Code.

(Amended Ord. 234-72, Approved 8-18-72)

SEC. 253. REVIEW OF PROPOSED BUILDINGS AND STRUCTURES EXCEEDING A HEIGHT OF 40 FEET IN R DISTRICTS. (a) Notwithstanding any other provision of this Code to the contrary, in any R district established by the use district provisions of Article 2 of this Code, wherever a height limit of more than 40 feet is prescribed by the height and bulk district in which the property is located, any building or structure exceeding 40 feet in height shall be permitted only upon approval by the City Planning Commission according to the procedures for conditional use approval in Section 303 of this Code.

(b) In reviewing any such proposal for a building or structure exceeding 40 feet in height, the City Planning Commission shall consider the expressed purposes of this Code, of the R districts, and of the height and bulk districts, set forth in Sections 101, 206 through 206.3 and 251 hereof, as well as the criteria stated in Section 303(c) of this Code and the objectives, policies and principles of the Master Plan, and may permit a height of such building or structure up to but not exceeding the height limit prescribed by the height and bulk district in which the property is located. *(Added Ord. 443-78, Approved 10/6/78)*

SEC. 260. HEIGHT LIMITS: MEASUREMENT. (a) Method of measurement. The limits upon the height of buildings and structures shall be as specified on the Zoning Map. In the measurement of height for purposes of such limits, the following rules shall be applicable:

1. The point above which such measurement shall be taken shall be as specified in the definition of "height" in this Code.

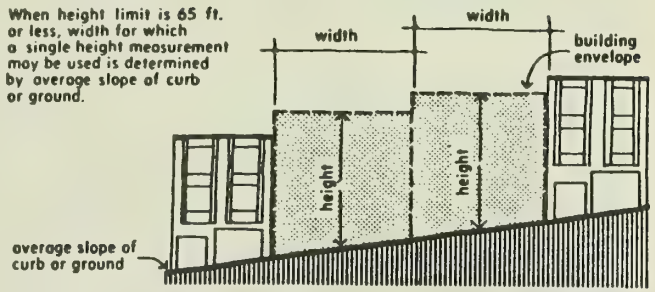
2. The upper point to which such measurement shall be taken shall be the highest point on the finished roof in the case of a flat roof, and the average height of the rise in the case of a pitched roof, or any higher point of a feature not exempted under Subsection (b) below.

3. In cases where the height limit is 65 feet or less and a street from which height measurements are made slopes laterally along the lot, or the ground slopes laterally on a lot that also slopes upward from the street, there shall be a maximum width for the portion of the building or structure that may be measured from a single point at curb or ground level, according to the definition of "height", as specified in the following table. These requirements shall not apply to any property to which the bulk limitations in Section 270 of this Code are applicable.

TABLE 6

Height Measurement on Lateral Slopes Where Height Limit is 65 Feet or Less

Average Slope of Curb or Ground From Which Height is Measured	Maximum Width for Portion of Building that May be Measured from a Single Point
5 per cent or less	No requirement
More than 5 per cent but no more than 15 per cent	65 feet
More than 15 per cent but no more than 20 per cent	55 feet
More than 20 per cent but no more than 25 per cent	45 feet
More than 25 per cent	35 feet



(b) **Exemptions.** The features listed in this subsection shall be exempt from the height limits established by this Code, in an amount up to but not exceeding that which is specified.

1. The following features shall be exempt; provided the limitations indicated for each are observed; provided further that the sum of the horizontal areas of all features listed in this Paragraph (b)1 shall not exceed 20 per cent of the horizontal area of the roof above which they are situated; and provided further that in any R district the sum of the horizontal areas of all such features located within the first 10 feet of depth of the building, as measured from the front wall of the building, shall not exceed 20 per cent of the horizontal area of the roof in such first 10 feet of depth.

As an alternative, the sum of the horizontal areas of all features listed in this Paragraph (b)1 may equal but not exceed 20 per cent of the horizontal area permitted for buildings and structures under any bulk limitations in Section 270 of this Code applicable to the subject property.

Any such sum of 20 per cent heretofore described may be increased to 30 per cent by unroofed screening designed either to obscure the features listed under (A) and (B) below or to provide a more balanced and graceful silhouette for the top of the building or structure.

(A) Mechanical equipment and appurtenances necessary to the operation or maintenance of the building or structure itself, including chimneys, ventilators, plumbing vent stacks, cooling towers, water tanks, panels or devices for the collection of solar or wind energy and window washing equipment, together with visual screening for any such features. This exemption shall be limited to the top 10 feet of such features where the height limit is 65 feet or less, and the top 16 feet of such features where the height limit is more than 65 feet.

(B) Elevator, stair and mechanical penthouses, fire towers, skylights and dormer windows. This exemption shall be limited to the top 10 feet of such features where the height limit is 65 feet or less, and the top 16 feet of such features where the height limit is more than 65 feet.

(C) Stage and scenery lofts.

(D) Ornamental and symbolic features of public and religious buildings and structures, including towers, spires, cupolas, belfries and domes, where such features are not used for

B.1.21

2. The following features shall be exempt, without regard to their horizontal area, provided the limitations indicated for each are observed.

(A) Railings, parapets and catwalks, with a maximum height of four feet.

(B) Open railings, catwalks and fire escapes required by law, wherever situated.

(C) Unroofed recreation facilities with open fencing, including tennis and basketball courts at roof level, swimming pools with a maximum height of four feet and play equipment with a maximum height of 10 feet.

(D) Unenclosed seating areas limited to tables, chairs and benches, and related wind screens, lattices and sunshades with a maximum height of 10 feet.

(E) Landscaping, with a maximum height of four feet for all features other than plant materials.

(F) Short-term parking of passenger automobiles, without additional structures or equipment other than trellises or similar overhead screening for such automobiles with a maximum height of eight feet.

(G) Amusement parks, carnivals and circuses, where otherwise permitted as temporary uses.

(H) Flag poles and flags, clothes poles and clothes lines, and weather vanes.

(I) Radio and television antennas where permitted as accessory uses and towers and antennas for sending or receiving of radio and television signals where permitted as principal or conditional uses by this Code.

(J) Warning and navigation signals and beacons, light standards and similar devices, not including any sign regulated by this Code.

(K) Public monuments owned by government agencies.

(L) Cranes, scaffolding and batch plants erected temporarily at active construction sites.

(M) Structures and equipment necessary for the operation of industrial plants, transportation facilities, public utilities and government installations, where otherwise permitted by this Code and where such structures and equipment do not contain separate floors.

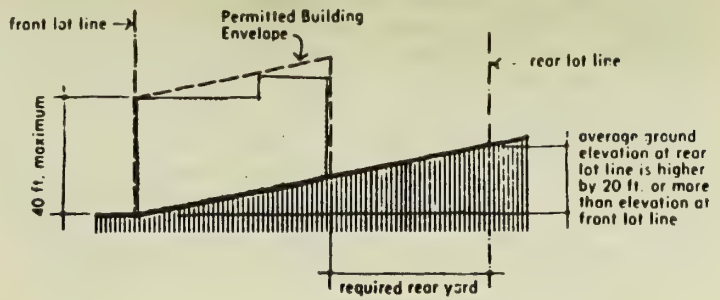
(N) Buildings, structures, and equipment of the San Francisco Port Commission, where not subject to this Code due to provisions of the San Francisco Charter or State law.

(Added Ord. 443-78, Approved 10/6/78)

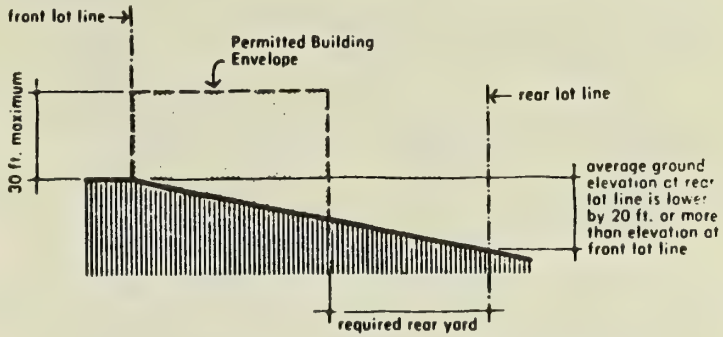
SEC. 261. ADDITIONAL HEIGHT LIMITS APPLICABLE TO CERTAIN USE DISTRICTS. (a) **General.** Notwithstanding any other height limit established by this Article 2.5 to the contrary, the height of dwellings in certain use districts established by Article 2 of this Code shall be further limited by this Section 261. The measurement of such height shall be as prescribed by Section 260.

1. No portion of a dwelling in any RH-1(D), RH-1 or RH-1(S) district shall exceed a height of 35 feet, except that:

(A) The permitted height shall be increased to 40 feet where the average ground elevation at the rear line of the lot is higher by 20 or more feet than at the front line thereof;



(B) The permitted height shall be reduced to 30 feet where the average ground elevation at the rear line of the lot is lower by 20 or more feet than at the front line thereof; and

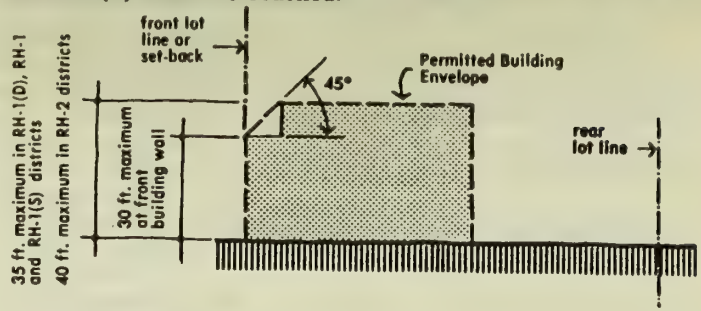


(C) The permitted height shall be reduced to 25 feet where the average ground elevation at the rear line of the lot is lower by 40 or more feet than at the front line thereof.

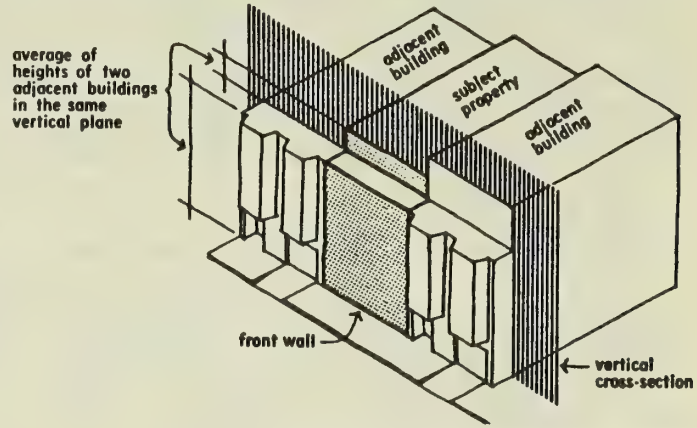
2. No portion of a dwelling in any RH-2 district shall exceed a height of 40 feet, except that the permitted height shall be reduced to 35 feet where the average ground elevation at the rear line of the lot is lower by 20 or more feet than at the front line thereof.

(c) **Height limits applicable to front portion of the property.** Except in cases where the average ground elevation at the rear line of the lot is higher by 20 or more feet than at the front line thereof, the following additional height limits shall apply to the front portion of properties containing dwellings in all RH-1(D), RH-1, RH-1(S) and RH-2 districts:

1. **Basic requirement.** The height limit shall be 30 feet at the front lot line or, where the lot is subject to a legislated set-back line or required front set-back as described in Section 131 or Section 132 of this Code, then at such set-back; and shall increase at an angle of 45 degrees from the horizontal toward the rear of the lot until the height limit prescribed by Subsection (b) above is reached.



2. **Increase based upon conditions on adjacent lots.** At the front wall of the building, and at every vertical cross-section of the building, parallel to the front lot line, to which the limit prescribed by Paragraph (c)1 above is applicable, said limit shall be increased to the average of the heights of the two adjacent buildings measured in the same vertical plane, or, if there is only one adjacent building, then to the height of the one adjacent building measured in the same vertical plane. For purposes of this provision, an adjacent building shall mean a building on a lot adjoining the subject lot along a side lot line.



(Amended Ord. 443-78, Approved 10/6/78)

SEC. 262. ADDITIONAL HEIGHT LIMITS APPLICABLE TO SIGNS. (a) The height limits established by this Article 2.5 shall apply to all signs regulated by this Code. No sign shall be erected, placed, replaced, reconstructed or relocated except in conformity with the provisions of this Article, whether such sign is free standing or attached to a building or structure.

(b) The height of signs is also regulated by Article 6 of this

Code, and in each case the most restrictive of the applicable height limitations shall prevail.

(Amended Ord. 234-72, Approved 8-18-72)

SEC. 263. HEIGHT LIMITS: SPECIAL EXCEPTIONS. In the height and bulk districts indicated in the following sections, buildings and structures exceeding the prescribed height limits may be approved by the City Planning Commission according to the procedures for conditional use approval in Section 303 of this Code; provided, however, that such exceptions may be permitted only in the areas specified and only to the extent stated in each section. *(Amended Ord. 234-72, Approved 8-18-72)*

Sec. 263.1. Special Exceptions: Southern Edge of Jackson Square. (a) In the 65-D-2 height and bulk district, as designated on Sectional Map No. 1H of the Zoning Map, height exceptions may be approved by the City Planning Commission in appropriate cases, up to but not to exceed a height of 200 feet.

(b) In acting upon any application under this section, the City Planning Commission shall consider the following criteria in addition to those stated in Section 303(c):

1. The siting of buildings or structures so as to produce a stepping down of height from the Downtown Office district to the area known as Jackson Square;

2. Avoidance of excessive bulk, intrusiveness or a continuous wall of buildings that would adversely affect views, penetration of sunlight or pedestrian amenity in Jackson Square or in any other area; and

3. Respect for the historical and architectural character and special scale of Jackson Square.

(Added Ord. 234-72, Approved 8-18-72)

Sec. 263.2. Special Exceptions: North of Ferry Building. (a) In the 84-X-1 height and bulk district as designated on Sectional Map No. 1H of the Zoning Map, height exceptions may be approved by the City Planning Commission in appropriate cases as provided herein. The purpose of providing for such exceptions is to encourage greater flexibility in project design and a gradual stepping down of the height of buildings from The Embarcadero toward the Bay. As used in this section, a "project area" shall be defined as the area between the north or east curb line of The Embarcadero (generally 60 feet inland from the waterfront line) and the Pier Head Line with boundaries as set by the Port Commission in any agreement entered into with a developer.

(b) Such height exceptions may be permitted provided that:

1. The height of the building or structure so approved by the City Planning Commission shall not exceed 125 feet; and

2. Within this 125-foot maximum, there shall be a limitation on permitted building volume located above the basic height limit of 84 feet, calculated as the product of 41 feet (the difference between 125 feet and 84 feet) and 15 per cent of the project area.

area. For purposes of the foregoing calculation only, the project area may include part or all of the adjacent 65-D-1 height and bulk district as well as part or all of the 84-X-1 height and bulk district.

(c) In acting upon any application under this section, the City Planning Commission shall consider the following criteria in addition to those stated in Section 303(c):

1. The development criteria for the Northern Waterfront Special Use District No. 1 as set forth in Section 240.1; and

2. The siting of buildings or structures so that higher elements are located nearest The Embarcadero and lower elements outward from The Embarcadero toward the Bay, with a gradual stepping down in height.

(d) No exception from the height limit shall be permitted in the 65-D-1 height and bulk district.

(Added Ord. 234-72, Approved 8-18-72)

Sec. 263.3. Special Exceptions: South of Ferry Building. (a) In the 84-X-2 height and bulk district as designated on Sectional Map No. 1H of the Zoning Map, height exceptions may be approved by the City Planning Commission in appropriate cases as provided herein. The purpose of providing for such exceptions is to encourage greater flexibility in project design. As used in this section, a "project area" shall be defined as the area between the north or east curb line of The Embarcadero (generally 60 feet inland from the waterfront line) and the Pier Head Line with boundaries as set by the Port Commission in any agreement entered into with a developer.

(b) Such height exceptions may be permitted provided that:

1. The height of the building or structure so approved by the City Planning Commission shall not exceed 175 feet; and

2. Within this 175-foot maximum, there shall be a limitation on permitted building volume located above the basic height limit of 84 feet, calculated as the product of 91 feet (the difference between 175 feet and 84 feet) and 10 per cent of the project area.

(c) In acting upon any application under this section, the City Planning Commission shall consider the following criteria in addition to those stated in Section 303(c):

1. The development criteria for the Northern Waterfront Special Use District No. 1 as set forth in Section 240.1; and

2. The siting of buildings or structures so that higher elements are located nearest The Embarcadero and lower elements outward from The Embarcadero toward the Bay, with a gradual stepping down in height. *(Added Ord. 234-72, Approved 8-18-72)*

SEC. 270. BULK LIMITS: MEASUREMENT. (a) The limits upon the bulk of buildings and structures shall be as stated in this section and in Section 271. The terms "height", "plan dimensions", "length" and "diagonal dimensions" shall be as defined in this Code. In each height and bulk district, the maximum plan dimensions shall be as specified in the following table, at all

B.1.23

Bulk Limits

District Symbol on Zoning Map	Height Above Which Maximum Dimensions Apply (in feet)	Maximum Plan Dimensions (in feet) Length	Diagonal Dimension
A	40	110	125
B	50	110	125
C	80	110	125
D	40	110	140
E	65	110	140
F	80	110	140
G	80	170	200
H	100	170	200
I	150	170	200
J	40	250	300
K	60	250	300
L	80	250	300
M	100	250	300
OS	See Section 290.		
X	This table not applicable. But see Section 260(a)3.		

(b) These limits shall not apply to the buildings, structures and equipment listed in Section 260(b)2(K), (L), (M) and (N) of this Code, subject to the limitations expressed therein.

(Added Ord. 234-72, Approved 8-18-72)

SEC. 271. BULK LIMITS: SPECIAL EXCEPTIONS. (a) **General.** The bulk limits prescribed by Section 270 have been carefully considered in relation to objectives and policies for conservation and change in San Francisco. There may be some exceptional cases in which these limits may properly be permitted to be exceeded to a certain degree, however, following public review and exploration of alternatives, provided there are adequate compensating factors. Such deviation might occur, when the criteria of this Section are met, for one or both of the following positive reasons:

1. Achievement of a distinctly better design, in both a public and a private sense, than would be possible with strict adherence to the bulk limits, avoiding an unnecessary prescription of building form while carrying out the intent of the bulk limits and the principles and policies of the Master Plan.

2. Development of a building or structure with widespread public service benefits and significance to the community at large, where compelling functional requirements of the specific building or structure make necessary such a deviation.

(b) **Procedures.** Deviations from the bulk limits under this section shall be permitted only upon approval by the City Planning Commission according to the procedures for conditional use approval in Section 303 of this Code.

(c) **Criteria.** In acting upon any application for a conditional use to permit the bulk limits to be exceeded under this section, the City Planning Commission shall consider the following standards and criteria in addition to those stated in Section 303(c) of this Code:

1. The appearance of bulk in the building, structure or development shall be reduced by means of at least one and preferably a combination of the following factors, so as to produce the impression of an aggregate of parts rather than a single building mass:

(A) Major variations in the planes of wall surfaces, in either depth or direction, that significantly alter the mass;

(B) Significant differences in the heights of various portions of the building, structure or development that divide the mass into distinct elements;

(C) Differences in materials, colors or scales of the facades that produce separate major elements;

(D) Compensation for those portions of the building, structure or development that may exceed the bulk limits by corresponding reduction of other portions below the maximum bulk permitted; and

(E) In cases where two or more buildings, structures or towers are contained within a single development, a wide separation between such buildings, structures or towers.

2. In every case the building, structure or development shall be made compatible with the character and development of the surrounding area by means of all of the following factors:

(A) A silhouette harmonious with natural land forms and building patterns, including the patterns produced by height limits;

(B) Either maintenance of an overall height similar to that of surrounding development or a sensitive transition, where appropriate, to development of a dissimilar character;

(C) Use of materials, colors and scales either similar to or harmonizing with those of nearby development; and

(D) Preservation or enhancement of the pedestrian environment by maintenance of pleasant scale and visual interest.

3. While the above factors must be present to a considerable degree for any bulk limit to be exceeded, these factors must be present to a greater degree where both the maximum length and the maximum diagonal dimension are to be exceeded than where only one maximum dimension is to be exceeded.

(Amended Ord. 234-72, Approved 8-18-72)

SEC. 290. HEIGHT AND BULK LIMITS FOR OPEN SPACE DISTRICTS. In the Open Space districts designated by the symbol "OS" on Sectional Maps Nos. 1H through 13H of the Zoning Map, the height and bulk of buildings and structures shall be determined in accordance with the objectives, principles and policies of the Master Plan, and no building or structure or addition thereto shall be permitted unless in conformity with the Master Plan. The inclusion of land in Open Space districts is intended to indicate its principal or exclusive purpose as open space, with future development of any character strictly limited. The exemptions from height and bulk limitations set forth in Section 260(b) of this Code shall not be applicable to Open Space districts unless in conformity with the Master Plan.

(Amended Ord. 234-72, Approved 8-18-72)

DOWNTOWN GROWTH MANAGEMENT PROGRAM

San Francisco, California

Sponsored by the San Francisco Chamber of Commerce

B.2.1

Prepared by
BOLLES ASSOCIATES
and
LIVINGSTON & ASSOCIATES
October 1979

As the scale and density of development increases, greater attention must be given to minimizing the adverse impacts of particular projects and the cumulative effect of these projects on the downtown environment. Correspondingly, the planning process must be flexible enough to address individual situations without unduly restricting development or significantly increasing the time and bureaucratic red tape required to obtain approval. Neither the existing planning code regulations nor the current high rise initiative satisfactorily address these concerns. The following recommendations are meant to suggest actions needed to address the problems associated with downtown growth and development.

Development Standards

The regulatory techniques available for managing downtown development include controls over height, floor area, bulk, and setbacks. So as not to limit design flexibility, the recommended development standards simply define the parameters of the basic building envelope and establish a maximum limit on the intensity of development. The design concept is to reduce the bulk of buildings as they increase in height, and to provide for side setbacks as the building lot increases in width. Limitations also are placed on the maximum height of buildings. The purpose is to avoid buildings that are out-of-scale with their surroundings by encouraging the development of tall, slim buildings which provide views, sunlight, and air. Suggested changes in existing development standards include lower building heights, limits on the intensity of development, and required side setbacks at upper floors of building towers.

A. Building Height

Properly designed and located high rise buildings can enhance the appearance, identity and functional efficiency of the downtown. In fact, greater height may be more desirable if it makes possible the provision of open space at ground level, allows for the penetration of light and air to the streets, and creates better views for building occupants while maintaining important view corridors from the street and other buildings.

The maximum height limit should be based on efficient building design with the tallest buildings clustered around the point of greatest access and gradually tapered toward the edges of downtown and the Bay. To be visually effective the tapering of height limits should be in increments of 100 feet with the height district boundaries drawn so that new buildings would not be of excessive height in relation to their surroundings.

Given these parameters, it is recommended that the existing height limits be changed as shown on map 3. The 700-foot height district is excessive considering the location and height of existing buildings in that district. The maximum height should be around 575 feet. This height is sufficient for a 40-42 story building and allows for the possibility of some setbacks and sculpturing of the upper floors of building towers. Height limits around lower Market Street and Jackson Square also need to be modified to provide for a transition between height districts and to produce the desired tapering effect between height districts.

SAN FRANCISCO BAY
MAP 3:
HEIGHT & BULK DISTRICTS:
C-3-O HEIGHT REVISIONS
400-I
500-I
150-X
400-I
500-I
200-I
320-I
150
500-I
575-I

The intensity of development is regulated by the ratio of building floor area to lot area. As coverage of the site is decreased, building height may be increased. On the other hand, total building size increases in proportion to the size of the site. To discourage the assemblage of large sites and encourage the construction of tall, slim buildings, an adequate floor area ratio and height limit are necessary. An excessive floor area ratio however, provides an incentive to demolish older buildings and replace them with much larger structures. The floor area ratio should be established based on the capacity of the transportation and utility systems, and the type of land uses permitted in the district.

The basic floor area ratio should be set to encourage the use of development bonuses which provide increased floor area in exchange for improved building design and other public benefits. However, the basic floor area ratio should not unduly penalize those property owners with small inside lots or lots that could not take advantage of any development bonuses even if they so desired.

To avoid excessive density and out-of-scale buildings, a maximum floor area ratio, obtainable with bonuses should be established. Since development bonuses are intended to encourage the provision of certain desirable public benefits and are not a means for doubling the size of a building, they should not increase the basic floor area ratio by more than 50 percent.

B.2.4

ratios should be revised as follows:

Zoning District	Basic F.A.R.	Maximum F.A.R.
C-3-O	12	18
C-3-R	8	12
C-3-G	8	12
C-3-S	7	10.5

C. Building Bulk

The major problem with downtown development is building bulk. Allowing tall buildings of a similar height to be closely grouped leads to an intensity of development which is considered undesirable by many people. While present bulk regulations effectively control large scale projects by limiting the maximum length and diagonal dimension of a building over a certain height, the present bulk controls are ineffective on small and medium sites and there are no requirements that adequate spacing be maintained between building towers to provide views and ensure adequate sunlight and air. In addition, there is no incentive to reduce the bulk of upper floors as a building increases in height. The present regulations give a bonus for the same reduction regardless of the building's height. These problems, however, are best addressed by required building setbacks and bonuses for reduced coverage as the building increases in height.

D. Side Setbacks At Upper Floors

To address the problem of excessive building bulk on small and medium sites and to provide

sufficient spacing between building towers in order to protect views and ensure adequate sunlight and air, building setbacks should be required above 150 feet in height. The amount of side setback should be based on lot width. Guidelines should be developed regarding the placement and arrangement of required side setbacks. Side setbacks above 150 feet should be required as follows:

Lot Width	Minimum Side Setback Required
If either lot dimension, length or width is less than 75 feet	no side setback required
75-100 feet	one setback of 15 feet increasing in direct proportion to the width of the lot up to a maximum of 25 feet, but in no case should the building width be required to be less than 75 feet.
greater than 100 feet	one setback of 25 feet plus an additional foot for each 2.5 feet of lot width greater than 100 feet.

Development Bonuses

We recommend eliminating the present formula of prescribing maximum bonuses as a percentage of the basic allowable floor area, in favor of an absolute number of square feet because the percentage formula places a premium on large parcels. In addition, some of the present bonuses should be eliminated or revised, while others should be required for reasons of public health, safety, and general welfare. Three new bonuses also have been established. The purpose of the proposed bonuses is to improve building design, encourage certain public amenities, and to meet various public objectives.

The following bonuses are recommended:

		Maximum square feet
A.	Low Coverage at Upper Floors	100,000

To encourage the construction of tall, slim buildings, a bonus is provided if the building is reduced in bulk as it increases in height. To obtain the maximum number of square feet allowed for this bonus, the building dimensions (either length and/or width) must be reduced a combined total of 2.5 feet for each 70 feet of building height (or some equivalent square footage) beyond any side setback or bulk limit requirements. A new building should be eligible for a proportionate percentage of the bonus based on the degree to which the building tower is reduced in bulk. The reduction should start at a height of 60 feet unless the street width is less than 60 feet. Then, the height at which the reduction starts would be lowered

width less than 60 feet, but not below a minimum height of 40 feet. Similarly, if the street width is wider than 60 feet, the point at which the reduction starts should be increased up to 80 feet. Guidelines should be developed describing how the building tower is to be reduced in length and width. (Revised)

B. Plazas 100,000

The design and location of new building plazas must not weaken existing plazas, interrupt building facade lines where they should be preserved, or disrupt retail continuity that is essential to the maintenance of healthy retail frontage. For each square foot of plaza a bonus of 10 square feet of floor area should be given up to the maximum number of square feet allowed for plazas. Guidelines for plazas should be established addressing their size, location, and relationship to other plazas, buildings, sidewalk widenings, and public open spaces. In addition, plazas must meet the following standards; otherwise, the amount of floor area bonus granted will be modified accordingly. (Revised)

PERCENTAGE OF BONUS GIVEN FOR:

Orientation: Must be in 75 percent sunlight from 11 a.m. to 2 p.m. May 1 to October 30. 20%

Wind: The plaza should not be subject to wind velocities exceeding 50 mph more than 0.01 percent of the time or 35 mph more than 0.1 percent of the time. 20%

Landscaping: At least 20 percent of the plaza's surface must be landscaped with plant materials. Up to two-thirds of the surface of the creditable plaza area may be occupied by planting, sculpture, pools, fountains, and similar features. The balance shall be suitable for walking, sitting and similar pursuits. 20%

Pedestrian Access: Must provide for the disabled; paths must be at least 5 feet wide, with a minimum entrance width of 10 feet. 20%

Public Seating: Benches or equivalent public seating must be provided. The amount of seating required should be based on the size of the plaza. The seating capacity (or number of seats required) should be equal to one seat for each four feet of the plazas perimeter. 20%

C. Preservation of Landmark Building 100,000

In addition to permitting an increase in floor area through the transfer of unused development rights from designated historic or architecturally significant buildings, an additional floor area bonus should be granted for the preservation of designated "A" buildings. (New)

D. Transit Proximity 25,000

To ensure that the greatest employment density is accessible to public transit, a bonus should be given for any lot within a 750-foot walking distance of a BART or MUNI Metro station, the Transbay Terminal, or other designated transit facilities. The amount of bonus should be equal to 50 square feet of floor area for each foot that the distance to the station entrance is less than 750 feet. (Revised)

E. Shortened Walking Distance 25,000

To improve pedestrian circulation, 40 square feet of floor area should be given for each linear foot by which the walking distance between streets or alleys is shortened. Such a walkway may be either within or outside a building, shall be readily identifiable from the public sidewalk, and shall have a minimum width of 10 feet plus 2 feet for each side which has shops, lobbies, elevator entrances or similar features along it. Where a walkway passes through two or more lots, the bonus shall be prorated in proportion to the length of walkway on each lot. (No Change)

F. Provision of Housing 100,000

A housing bonus is established to help stimulate the construction of new housing that would not be built under normal market conditions in order to help meet the housing needs of those who will be working downtown as a result of new office buildings being constructed. The amount of bonus should be equal to the net increase in floor area provided by the new housing on a one-to-one basis. Market rate housing must be located in the downtown C-3 districts, while low and moderate income housing may be built anywhere in the city. If low or moderate income housing is provided in a C-3 district, the floor area bonus should be granted on a two-to-one basis. (New)

G. Energy Conservation 25,000

A bonus should be given for buildings that are designed to conserve energy beyond what is required by code standards prevailing at the time. The amount of the bonus should be based on the percentage of energy conserved. A floor area bonus of 5,000 square feet should be given for each 15 percent reduction in energy demand allowed under state energy conservation standards. (New)

Urban Design Considerations

A. Siting and Orientation

The siting and orientation of new buildings should be included as part of a mandatory design review procedure that would be conducted prior to the submittal of final

shadows, (2) wind velocity, (3) views and view corridors, (4) plazas, (5) street and sidewalk widths, (6) nearby buildings, and (7) other pertinent design factors.

B. Improvements to Pedestrian Environment

1. Limitations on Blank Walls at street level should be required in order to avoid a monotonous and sterile pedestrian environment. The first story building wall facing a street should be devoted to building entrances, display windows, landscaping, or windows affording views into retail, office, or lobby space. Blank walls should be limited to no more than 40 percent of the building frontage and should not extend continuously for more than 25 feet.

2. Sidewalk widening should be required based on existing sidewalk widths and the size of the new building in order to accommodate the pedestrian traffic associated with the building. The sidewalk widening may consist of an arcade, cantilever, building setback or plaza open to the general public at all times, and shall run the full length of the lot along the street or alley which the building fronts. Unobstructed sidewalks should be required as follows:

Building Size Square Feet	Minimum Sidewalk Width
400,000 or less	10 feet
400,000 - 800,000	15 feet
800,000 - plus	20 feet

along the sidewalk in front of a building. Design improvements might include the location of building elevators, multiple building entrances, building entrance setbacks, or widened sidewalks. Guidelines should be developed to assist in the review.

4. Special design treatment should be encouraged at the lower floors of high rise buildings in order to provide a sense of pedestrian scale, definition of street space, and visual interest. Guidelines should be developed to assist in the review.

5. Retail space at street level should be encouraged at appropriate locations to provide visual interest and retail continuity, and to meet the needs of downtown employees and residents.

6. Views and View Corridors: Guidelines should be established to protect views from buildings and streets. Views should be considered as part of the mandatory design review procedure and protected by building setbacks and lower coverage of upper floors.

PRESERVATION OF LANDMARK BUILDINGS

Continued growth downtown will eventually lead to the irreplacable loss of all or most of the remaining landmark quality buildings, unless a mechanism is found to limit the development potential of a landmark site to that of the present building's gross floor area. To encourage the preservation of historic and architecturally

significant buildings, the present zoning regulations need to be revised and a development rights transfer program established. Allowing the transfer of development rights effectively preserves a landmark quality building by eliminating the economic incentive to demolish the older building and replace it with a larger structure. Permitting the unused development rights to be transferred to another site, both protects the landmark building and compensates its owner without any cost to the city.

The unused development rights that are transferrable consist of the difference between the gross floor area permitted by the basic floor area ratio for that site and the gross floor area of the existing building. The entire amount should be transferrable on a two-to-one basis. A developer also should be allowed to transfer the unused development rights from as many designated historic and architecturally significant buildings that would be permitted by the maximum F.A.R. for the new development site. This would neither increase the overall basic F.A.R. for the district nor allow the maximum F.A.R. for a specific site to be exceeded. The new building would still have to conform to the height, bulk, building setbacks, and maximum F.A.R. for the particular site. In the process designated landmark quality buildings are preserved. If any of the transferrable floor area remains, the developer should be allowed to bank or sell the remaining amount.

A development rights transfer district should be established for the downtown C-3 Use Districts. This permits historic and architecturally significant buildings to be preserved in the same district in which new development is occurring. The unused development rights would be based on the basic F.A.R. of the C-3 Use Districts (C-3-O, C-3-R, C-3-G, C-3-S) in which the landmark building is located.

Unused development rights should be transferable between districts but only up to the maximum F.A.R. permitted for the district in which the development rights are transferred.

An official list of historic and architecturally significant structures should be established. Owners of landmark buildings would be eligible to transfer development rights only after formal designation of their buildings. Developers then could negotiate with the owners of designated landmark buildings for the unused development rights. The list of eligible structures should include the A and B rated buildings from the soon to be published architectural and historical survey of downtown buildings conducted for the Foundation for San Francisco's Architectural Heritage. (see appendix). Designated city landmarks also should be included and classified de facto as A buildings. This procedure would allow additional structures to be added at a later date. Adoption of an official list also would inform developers regarding buildings the city hopes to preserve.

Upon the sale of an eligible building's unused development rights, the owner should be required to place a restriction in the deed limiting the development rights to the existing gross floor area of the landmark building. The restriction on the deed would run with the land, limiting development on the property in perpetuity. The restriction should be recorded and copies provided for official city records.

MANDATORY DESIGN REVIEW

To minimize delays and uncertainties, a mandatory design review procedure with guidelines should be substituted for the arbitrary application of discretionary review powers. All new development in the C-3 districts should be reviewed in

vanpools by having priority parking space available.

C. Transit: Encourage the use of public transit by employees and support efficiency improvements.

D. Parking Management: Explore setting up C-3 zone as special parking district, to encourage car/vanpool parking. Due to existing heavy use of bridges and freeways, long-term single-occupant auto commute trips into downtown San Francisco should be discouraged.

E. Marketing and Information: Develop and print downtown transit and pooling guide/map, make transit routes and schedules available, focus marketing on new employees and company-by-company basis.

Downtown Transportation Improvement Assessment District:

A. Investigate the feasibility of an assessment district that would be established by petition to Board of Supervisors by over 50 percent of property owners within key downtown area.

B. Generate governing board appointed in the following manner:

Chamber of Commerce	3	members
Building Owners and Managers Associations	3	members
Board of Supervisors	2	members
Mayors Office	2	members
SPUR	1	member
	11	members

B.2.10

the Chamber of Commerce.

D. A list of eligible projects and an assessment formula should be developed annually by the Board. The projects should be designed to improve access to the San Francisco downtown district.

E. Assessment District funds should be used to leverage Federal, State and regional funds as much as possible.

F. Only those services not now funded will be eligible. Assessment District funds should not be used to pay for services currently provided.

Transit Guidelines

Recognizing the high cost of additional public transit service, the Downtown Business Community should support only those programs that will provide the most capacity to downtown at the least cost.

A. San Francisco Municipal Railway:

1. Support the purchase and use of high capacity articulated buses.

2. Support increased MUNI fares at rush-hour.

3. Support increased efficiency through various means, including part-time drivers, transit priority lanes, improved enforcement, improved loading and other measures.

4. Encourage transfer agreements between MUNI and BART, and between MUNI and the Golden Gate ferry system.

accordance with the design guidelines prior to the submittal of final design plans. The environmental review process should be conducted concurrently so that appropriate changes can be incorporated in the final design. A time limit of 120 days should be required for the completion of both the design review and environmental review process. Upon completion of both the design review and environmental review, the Planning Commission would give preliminary approval of the proposed project with appropriate changes. Final design plans could be submitted at any time up to one year. Final approval would be granted providing the final plans were consistent with the required development standards and design review changes. A time limit of 2-3 weeks should be placed on the approval of final plans with plan checking by the Planning and Building Departments done concurrently.

The design review process should be limited to the siting, orientation and facade treatment of new buildings as they affect the design of the pedestrian environment, views and view corridors, sunlight, wind velocity, design and location of plazas, building setbacks and the granting of development bonuses. Guidelines should be prepared to inform developers, architects, and the general public of what is required. In addition, the guidelines, stated as precisely as possible, would provide substantive standards to evaluate proposed projects. The guidelines should be prepared under separate document, rather than placed in the Planning Code, and should be adopted by the Planning Commission as official policy. The Planning Commission would have authority to require changes consistent with the guidelines with all decisions appealable to the Board of Supervisors. Action by the Planning Commission should be supported by findings of fact obtained from environmental impact reports, staff reports, public testimony, design guidelines, and other official planning documents.

Transportation Recommendations

Making efficient use of present transportation resources in a cost-efficient manner, during this era of scarce energy resources and scarce fiscal resources, is an appropriate strategy for San Francisco's downtown community. Nationally, this approach is known as Transportation Systems Management (TSM). This report recommends cost-efficient programs for handling downtown transportation problems, including a downtown TSM program and a Transportation Improvement Assessment District to help finance needed transportation improvements.

Downtown Transportation Systems Management Program:

Develop and implement a complete downtown transportation systems management program for major employers and office buildings through the Chamber of Commerce. Administration of the program will require a manager to establish programs tailored to the needs of individual companies and to coordinate and market the overall program. A Board of Directors, representing both the employers and employees, should be established and policy support and commitment obtained from individual companies located in the downtown.

Components of a transportation systems management (TSM) program include:

A. Flex-time: Support downtown major employer program to spread work times and spread rush load on transit, utilizing present demonstration project.

B. Ride Sharing: Support intensive downtown major employer carpool and vanpool programs,

B. East Bay:

1. Support improvements to BART service.
2. Support expanded transbay bus service.
3. Encourage improved access and feeder service to suburban BART stations.

C. North Bay:

1. Encourage increased use of existing ferry system.
2. Support use of articulated buses.
3. Support improved access to bus and pooling facilities.

D. South Bay:

1. Support continued use of existing transit systems and investigate viable alternative.
2. Support better connection to and from Southern Pacific depot.
3. Support improved access to rail, bus and pooling facilities.

O HIGH-RISE REGULATION

TEXT OF PROPOSED INITIATIVE ORDINANCE
PROPOSITION O

Be it ordained by the people of the City and County of San Francisco:

Section 1. The people of the City and County of San Francisco hereby find and declare that the uncontrolled spread of high-rise buildings and the populations of these buildings detract from the habitability of San Francisco by:

a. Increasing traffic congestion and parking problems;
b. Increasing air, noise and water pollution;
c. Creating a dark, windy and uninviting downtown area;
d. Increasing the demand on already over-burdened public services, such as fire, police, public transit and sewer facilities;
e. Increasing the cost of said public services at a time when property tax revenues from downtown buildings have declined because of the passage of State Proposition 13;
f. Placing an increased demand upon the limited housing stock of San Francisco and thus contributing to rising housing costs in San Francisco; and
g. Contributing to an overall decline in the quality of life in San Francisco and the entire San Francisco Bay area.

Section 2. The Zoning Map of the City and County of San Francisco, as described in Sections 105 and 106 of the City Planning Code (Article 1 of Part II, Chapter II of the San Francisco Municipal Code) is hereby amended to establish new maximum building height limits in the C-3 districts as follows:

C-3-O (Downtown Office District).....260 feet
C-3-R (Downtown Retail District).....150 feet
C-3-G (Downtown General Commercial District).....130 feet
C-3-S (Downtown Support District).....130 feet

Section 3. Table 1 of Section 124 of the City Planning Code (Article 1 of Part II, Chapter II of the San Francisco Municipal Code) is hereby amended to establish new basic floor area ratio limits in the C-3 districts as follows:

District	Basic Floor Area Ratio Limit
C-3-O	8 to 1
C-3-R	7 to 1
C-3-G	5 to 1
C-3-S	5 to 1

(Continued on Page 112)

Section 4. Section 126 of the City Planning Code (Article 1 of Part II, Chapter II of the San Francisco Municipal Code) is hereby repealed and the following Section 126 added:

a) In any C-3 district, the development bonuses specified below, where applicable, may be added to the square footages permitted under the basic floor area ratio limits established in Section 3 herein:

1. Landmark Bonus. When a landmark designated by the Supervisors under Article 10 of this Code or a building listed in the National Register of Historic Places is located on or within 500 feet of the site of a proposed new building or development, and if said landmark or Registered Building is preserved in perpetuity by the owner of said new building or development, then a bonus equal to 50,000 square feet or the floor area of the landmark or Registered Building, whichever is greater, will be permitted, to a maximum of 100,000 square feet.

2. Housing Bonus. When new housing is constructed on or within 500 feet of the site of a proposed new building or development by the owner of said building or development, then a bonus equal to the floor area of the additional housing created will be permitted, provided that said bonus shall be reduced by the amount equal to the total floor area of any existing housing demolished as part of or in anticipation of said building or development or new housing.

3. Additional bonuses. As provided in Section 302 of this code, the City Planning Commission may adopt other development bonuses. However, any new bonus shall be added only in exchange for significant public benefits created within the following categories as part of the building or development:

(A) Encouragement of public transit usage.
(B) Energy conservation beyond that mandated by law.
(C) Improvement of pedestrian environment.
(D) Development of new housing in San Francisco.

No development bonuses adopted pursuant to this Sub-paragraph 3 shall be permitted in connection with a building or development project if a designated city landmark or National Register building is demolished as part of or in anticipation of said project or development.

) Regardless of any established or future bonus ovisions, no building or development in any C-3 strict shall exceed the following maximum floor area tios which are hereby established:

District	Maximum floor Area Ratio Limit
C-3-O	14 to 1
C-3-R	10 to 1
C-3-G	8 to 1
C-3-S	8 to 1

ction 5. Section 261, subsection (h) of the City l?

Planning Code (Article 2.5 of Part II, Chapter II of the San Francisco Municipal Code) is hereby amended by adding the following:

3. No portion of a structure in any C-3-O, C-3-R, C-3-G or C-3-S district shall exceed the heights specified below, except as provided in Section 260, subsection (b):

District	Height Limit
C-3-O	260 feet
C-3-R	150 feet
C-3-G	130 feet
C-3-S	130 feet

Section 6. Section 302 of the City Planning Code (Article 3 of Part II, Chapter II of the San Francisco Municipal Code) is hereby amended by adding the following subsections:

(h) Areas in other use districts may not be reclassified to any C-3 classification, nor may any C-3 area be changed to another C-3 classification which would allow more intensive use of the area.
(i) The height limits and floor area ratio limits in the C-3 districts as hereby established shall not be subject to exceptions, variances or amendments which would have the effect of increasing any height or floor area. Amendments which would have the effect of lowering any height or floor area ratio limit may be enacted by the appropriate legislative bodies.

Section 7. All height limits and floor area ratio limits in C-3 districts lower than the ones established herein in existence at the time of the qualification of this initiative shall remain in effect. This ordinance shall not be construed as increasing any existing height or floor area limits.

Section 8. This ordinance shall apply to limit and prohibit the exercise of that part of any permit or other entitlement to use authorizing greater height or floor area ratio than those specified herein unless all of the following conditions are met:

a. The permit was lawfully applied for on or before the date of the qualification of this initiative; and
b. The permit was finally and lawfully granted by the City and County of San Francisco on or before the date of qualification of this initiative; and
c. The right to exercise this permit was fully vested on or before the date of qualification of this initiative; and
d. If the permit was the subject of litigation or appeal on the date of qualification of this initiative, the permit was determined finally in subsequent judicial proceedings to have been lawfully granted.

Section 9. If any part of this ordinance is held invalid by a court of law, or the application thereof to any person or circumstance is held invalid, such invalidity shall not effect the other parts of the ordinance or applications of this ordinance which can be given effect without the invalid part or application, and to this end the sections of this ordinance are separable.

SAN FRANCISCANS FOR REASONABLE GROWTH

9 FIRST STREET, ROOM 826 • SAN FRANCISCO, CALIFORNIA 94105 • TELEPHONE (415) 566 7050

NE 9, 1980

FIRST PUBLICATION LEGAL NOTICES

NOTICE OF INTENT TO CIRCULATE PETITION

Notice is hereby given of the intention of the persons whose names appear hereon to circulate an initiative petition within the City and County of San Francisco to amend the City Planning Code, Part II, Chapter II of the San Francisco Municipal Code by changing the text as follows

ANNUAL LIMIT ON SAN FRANCISCO OFFICE DEVELOPMENT

There will be a cumulative annual limit of 1,000,000 gross square feet of new commercial office space for which permits will be issued. Criteria for selection on a competitive basis of which proposed projectgs will be approved within this annual limit will be established by ordinance

Remodeling of existing structures to office use will not be subject to this annual limit, but conversion to office use of residential structures or viable industrial buildings, and the sprawl of downtown office use into neighborhood commercial or residential districts shall be prohibited by ordinance.

This initiative shall take effect on January 1, 1981, and shall remain in effect until December 31, 1985. The Board of Supervisors shall submit a referendum for the November, 1985, general election to continue this measure without substantive amendment for an additional five year period and for its submission as a referendum in a like manner every five years thereafter as long as it shall remain in effect

A statement of the reasons for the proposed action as contemplated in this initiative is the continued addition of huge amounts of new office space in San Francisco jeopordizes the livability of this City and will displace almost all its lower-income residents. Proposition 13 has significantly reduced revenues from downtown property taxes, thereby shifting costs of downtown services to the residential neighborhoods. Existing transportation networks cannot accomodate the number of people projected to come into the City if the current rate of downtown construction continues. Buildings with architectural or historic merit are threatened by continued pressure from downtown highrise development. New office workers have created a demand for housing that distorts the City's housing market, thereby worsening shortages and escalating housing costs. In order to achieve a balanced and healthy economic development for San Francisco, we are proposing this initiative. Reasonable economic growth can be accomodated within the framework hereby established

Gerry Cauthen
John Elberling
Tony Kilroy

No. 85446 June 9-1T-R

FIRST PUBLICATION LEGAL NOTICES

NOTICE OF INTENT TO CIRCULATE PETITION

Notice is hereby given of the intention of the persons whose names appear hereon to circulate an initiative petition within the City and County of San Francisco to amend the City Planning Code, Part II, Chapter II of the San Francisco Municipal Code by changing the text as follows

INCENTIVE FOR PRESERVATION OF MERITORIOUS BUILDINGS AND REPAIR OF UNSAFE RESIDENTIAL HOTELS

The permitted basic floor area of any proposed development within the C3 district may be increased by the acquisition and transfer of the amount of permitted basic floor area in excess of the actual gross floor area of any approved Landmark or Structure of Merit in San Francisco

As a condition for this transfer, the owner of the Landmark or Structure of Merit must guarantee the permanent retention and maintenance of that building to the satisfaction of the City Planning Commission. The basic floor area transfer may be acquired for whatever consideration is agreed to by the respective parties in accordance with law

To insure an effective incentive for preservation, the permitted basic floor area increase as a result of such transfers may be further increased by a multiple established by ordinance. But in no event will the gross floor area of a project exceed a maximum floor area, which shall be specified, as a result of any combination of floor area transfers and/or development bonuses.

A parallel mechanism shall be established by ordinance to provide the same transfer of basic floor area from existing residential hotels anywhere in San Francisco to proposed developments in the C3 district Abatement of all code violations and permanent operation of substantially the number of existing units as permanent inexpensive housing will be required as a condition for this transfer.

The provisions of this initiative shall be in effect immediately upon adoption. This initiative may be amended by ordinance adopted by the unanimous vote of the Board of Supervisors

A statement of the reasons for the proposed action as contemplated in this initiative is: Buildings with architectural or historic merit and inexpensive residential hotels are threatened by continued pressure from commercial development, especially downtown. Many residential hotels are unsafe and need rehabilitation assistance, while representing a large potential amount of inexpensive and un-subsidized housing, particularly for the elderly. Reasonable economic growth can provide an incentive for the preservation and maintenance of these buildings as urban and human resources.

Brad Paul
John Elberling
Tony Kilroy

No. 85448 June 9-1T-R

FIRST PUBLICATION LEGAL NOTICES

NOTICE OF INTENT TO CIRCULATE PETITION

Notice is hereby given of the intention of the persons whose names appear hereon to circulate an initiative petition within the City and County of San Francisco to amend the City Planning Code, Part II, Chapter II of the San Francisco Municipal Code by changing the text and reclassifying property as follows

HEIGHT REDUCTION AND PROTECTION AGAINST DOWNTOWN SPRAWL AND SQUAT BUILDINGS

The area of the C3 district will be reduced by ordinance to exclude the significantly residential areas of the Tenderloin and South of Market districts. The area of the C3 district in particular shall be reduced by ordinance on at least its northern and southern boundaries to assure improved transition and reduced negative or displacing impacts on the existing mixed land uses in those areas.

No area outside the C3 district may be rezoned by ordinance in any way that would permit commercial development that would exceed that allowed by current C2 zoning, in order to prevent the sprawl of downtown development into the City's neighborhoods C2 zoning cannot be extended by ordinance into any area currently zoned for residential use.

Downtown height limits shall be reduced by ordinance in whole or part below the existing limits, but residential buildings or segments of buildings may be exempted from this reduction. In no event will heights greater than those now in effect be permitted except by vote of the people.

Current bulk limits for new buildings will also apply to street level for any proposed commercial development which does not qualify for at least three development bonuses, in order to prevent squat buildings.

A statement of the reasons for the proposed action as contemplated in this initiative is: The continued addition of huge amounts of new office space in the downtown commerical district jeopordizes the liveability of San Francisco. Growth of commercial development is spreading into new areas and displacing existing housing, despite the City's critical housing shortage. New development has taken on a physical scale which is dehumanizing and overwhelming the character of the City.

Isabel Ugat
John Elberling
Tony Kilroy

No 85449 June 9-1T-R

NOTICE OF INTENT TO CIRCULATE PETITION

Notice is hereby given of the intention of the persons whose names appear hereon to circulate an initiative petition within the City and County of San Francisco to amend the City Planning Code, Part II, Chapter II of the San Francisco Municipal Code by changing the text as follows

TANDEM HOUSING REQUIREMENT FOR OFFICE DEVELOPMENT

As a condition for approval of a building permit, the developers of any proposed commercial office building in San Francisco will secure an approved building permit for either.

-the substantial rehabilitation of existing housing in San Francisco for permanent operation as inexpensive housing, or,

-new construction of any kind of housing in San Francisco

The total amount of new or rehabilitated housing required cumulatively in one or more locations will be one housing unit for every four employees who will work in the proposed office development. The developers will be required to post a bond to assure the development and occupancy of the required housing, and to be the principal developer of that housing

As an alternative to the required housing development, developers of commercial office buildings in San Francisco may pay an in-lieu fee to the City's Housing Development Fund. The amount of the in-lieu fee will equal the number of required housing units multiplied by an amount equal to the average downpayment used to buy an average housing unit in San Francisco, as determined annually by the City Planning Commission.

Developers may use any combination of new housing, rehabilitated inexpensive housing, or in-lieu fee payment to satisfy this tandem housing requirement for commercial office building development. But any existing housing units demolished or otherwise removed as part of the office development or required housing development must be replaced in full in addition to the required housing.

This housing requirement will also apply to the conversion of existing buildings to commercial office use.

This initiative may be amended by ordinance adopted by a unanimous vote of the Board of Supervisors.

A statement of the reasons for the proposed action as contemplated in this initiative is: The continued addition of huge amounts of office space in San Francisco jeopordizes the livability of San Francisco and will displace almost all its low-income residents by increasing housing demand. It is sound energy conservation and environmental practice to develop new housing near to office employment centers. It is only fair for office developers to be required to assist in solving the problems their projects create, especially the sharp increase in housing costs caused by the rapidly increasing demand for housing. Reasonable economic growth can be accomodated within the framework hereby established

Sue Lee
John Elberling
Tony Kilroy

No. 85447 June 9-1T-R

NOTICE OF INTENT TO CIRCULATE PETITION

Notice is hereby given of the intention of the persons whose names appear hereon to circulate an initiative petition within the City and County of San Francisco to amend the City Planning Code, Part II, Chapter II of the San Francisco Municipal Code by changing the text as follows.

NEW FLOOR AREA RATIOS AND DEVELOPMENT BONUSES

Maximum floor area ratios for the C3 districts will be permanently established which are the same as the basic floor area ratios now in effect. Basic floor area ratios shall be established at one-half their present levels

Development bonuses in effect before the adoption of interim controls will be permanently abolished. The following new categories of bonuses will be established with formulas and amounts to be set by ordinance: Open Space Plazas, Arcades, Atriums, and Courtyards shall qualify a development for a bonus of up to 100,000 gross square feet.

-Housing bonus A special bonus will be awarded for the development of any housing within the C3 district, or any new inexpensive housing anywhere in San Francisco, based on the net increase in housing units

-Preservation bonus Preservation of approved Landmarks or Structures of Merit in the C3 district shall qualify a development for a bonus.

-Energy Conservation bonus Energy conservation substantially beyond that mandated by law will qualify a development for a bonus

-Transportation bonus Transportation facilities shall qualify a development for a bonus proportional to the additional development costs involved

Special transportation bonus

Other development bonuses may be adopted by referendum In no event will the gross floor area of a development exceed the maximum permitted floor area as the result of any bonus or combination of bonuses

A statement of the reason for the proposed action as contemplated in this initiative is: The continued addition of huge amounts of office space in the downtown commercial district jeopordized the liveability of San Francisco and will displace almost all its lower-income residents Existing transportation networks cannot accomodate the number of people projected to come into the City if the current rate of downtown construction continues Buildings with architectural or historic merit are threatened by continued pressure from downtown highrise development New office workers have created a demand for housing that distorts the City's housing market, thereby worsening shortages and escalating housing costs. In order to achieve a balanced and healthy economic development for San Francisco, we are proposing this initiative. Reasonable economic growth can be accomodated within the framework hereby established

Bonnie Fisher

SAN FRANCISCANS FOR REASONABLE GROWTH
9 FIRST STREET, ROOM 826 • SAN FRANCISCO, CALIFORNIA 94105 • TELEPHONE: (415) 566-7050

Environmental Science Associates
1291 East Hillsdale Boulevard
Foster City, Ca. 94402

September 23, 1981

Attention: Marty Abell

Dear Consultants:

We have been aware, and others have noted that our group of "Notices of Intent" published last year, which are to be evaluated as one of the Alternatives in the "Downtown EIR", refer to many specifics not fully defined (they were to be spelled out in the actual initiative ordinances), or to follow-up actions mandated to be carried out by City government without specific details being provided. Obviously, to carry out an analysis of this Alternative, a set of assumptions must be made to fill in all these regulatory details. Equally obviously, we believe it is our right, as the authors of this Alternative, to specifiy these assumptions.

Thus enclosed please find our "Details of June 9, 1980, 'Notices of Intent'". In it, using a keying system referring to the five Notices, we specify the various provisions that we assume to fill out the intent of the Notices, definitions, etc. If questions still remain for your analysis, please contact me.

You will note that in many cases we simply incorporate provisions or procedures from other of the Alternatives to be analyzed in the Downtown EIR that we feel are suitable also for our Notices, and which should make your work somewhat simpler.

Two other points should be mentioned:

- Some provisions of the "Annual Limit" NOI have to be included in this overall Alternative, even though the matter of limits per se will be treated differently, as mitigation.

- We are seeking to have only one revision to specific content of a NOI itself - this regarding the Housing Requirement NOI (see item 14). In view of the massive revisions to Guiding Downtown Development in the last year, we believe this is a reasonable request. The matter in question is of great substantive importance, and would not otherwise be addressed in any Alternative.

We must presume that the changes in Alternatives and study area we requested on 9/17 will be incorporated into the Downtown EIR for adequate analysis as well for this Alternative.

Sincerely,

John Elberling
For: SFRG

cc: Alec Bash, DCP
Monitoring Panel

SAN FRANCISCANS FOR REASONABLE GROWTH
9 FIRST STREET, ROOM 826 • SAN FRANCISCO, CALIFORNIA 94105 • TELEPHONE (415) 566 7050

DETAILS OF JUNE 9, 1980, "NOTICES OF INTENT" ("NOI's")

Item numbers correspond to specific paragraphs as indicated on copy of NOI's attached.

NOI: Annual Limit on San Francisco Office Development

SFRG concurs with the proposed treatment of the annual limit as a mitigation measure to be applied to all alternatives.

1. However, representative "criteria" as called for in the NOI are intended to include the following (some allocation system must be presumed, based on either merit of projects or 'first-come-first-served'; our NOI proposed a merit system): (a) provision of low/mod/middle-income housing in excess of that required by other zoning rules or required mitigation; (b) restoration of an urban amenity previously lost (e.g., restoration of the facade of the Chronicle Building, rebuilding of Crystal Palace, etc.); (c) superior architectural design; (d) preservation of existing non-office jobs and small businesses at project site; (e) particiaption of project tenants in job skills development program for unemployed/underemployed San Francisco residents, including on-site job slots; (f) provision of child care for building tenants' employees; (g) occupancy of 50% of the project by a single firm headquartered in San Francisco.

2. Also, the second paragraph of this NOI clearly belongs as part of the overall 'package' of the five NOI's as a set of zoning controls, and should be incorporated into the analysis of that Alternative.

The definition of "viable" industrial buildings is intended to apply to any building which does not meet the criteria described, together, by (a) 1, 2, and 3 on page 25 of Guiding Downtown Development. Additionally, it is intended to apply to any industrial structure in M1, M2, and CM zoning districts (the basis is that, if these are no longer viable industrial areas, proper procedure is to rezone the district first).

The definition of "downtown office use" is intended to be any project where 5,000 square feet of office space or more will be leased to a single tenant or, cumulatively, to tenants using the space for the same activity (e.g., doctor's offices or lawyer's offices).

"Neighborhood commercial or residential districts" is intended to include (in addition to those normally identified as such): (a) North Beach and Chinatown C2 districts; (b) Hayes Valley, Upper Market St., and Western Addition C2 districts west of Franklin St.; (c) the entire C2 Mission District south of Seventeenth St. and the CM district south of Duboce/Division Sts.

DETAILS: PAGE 2

NOI: Incentive for Preservation of Meritorious Buildings and Repair of Unsafe Residential Hotels

3. The technical mechanism for accomplishing the transfer of development rights is intended to be same as set forth in Section F.1., page 21, except that, under this Alternative, there is no "Special Development District", nor the locational limitations described, of Guiding Downtown Development.

4. The "multiple" is intended to be defined and applied as described for the "additional development allowance" in Section F.2., page 22 of Guiding Downtown Development, except that the percentage specified is 25% rather than 50%.

The "maximum floor areas" are intended to be defined as those proposed in the "New Floor Area Ratios" NOI.

5. The "parallel mechanism" is intended to be the same TDR process as proposed for meritorius buildings in this NOI, and apply to all residential hotels as defined by the Hotel Conversion Ordinance. "Substantially the number of existing units" is intended to be defined as 85% of the units of record as defined by the Hotel Conversion Ordinance. "Inexpensive housing" is intended to be defined as "low-income housing" as defined in the Hotel Conversion Ordinance.

NOI: Height Reduction and Protection Against Downtown Sprawl and Squat Buildings

6. The "significantly residential area" of the Tenderloin is intended to be defined as the area for which re-zoning applications are now on file by the North of Market Planning Coalition et al., and the revised zoning to be the same as proposed in that re-zoning application. The "significantly residential area" of the South of Market is intended to be defined as Areas 4 and 5 of the SPUR South of Market Study, page 62, and the revised zoning to be the same as proposed in that Study for those Areas, Table 1, page 65.

The "particular" reduction of the C3 district is intended to be: (a) the movement of the northern boundary of the C3O south to Sacramento St., with the revised zoning for the affected area to be an extension of the Jackson Square C2 district; (b) the movement of the southern boundary of the C3O district north to Mission St. and the elimination of the C3S district, with the revised zoning for the affected area to be that proposed for Areas 1, 3, and 8 of the SPUR South of Market Study, page 62, in Table 1, page 65.

SAN FRANCISCANS FOR REASONABLE GROWTH
9 FIRST STREET, ROOM 826 • SAN FRANCISCO, CALIFORNIA 94105 • TELEPHONE (415) 566 7050

7. "Downtown heights limits" as "reduced by ordinance" are intended to be equal, at any given location, to the lowest height limit proposed for that area by any of the other Alternatives, including the proposed reduction of height limits in the Tenderloin as filed by the North of Market Planning Coalition et al., but specifically not including height limits as proposed in Proposition "O".

NOI: New Floor Area Ratios and Development Bonuses

8. I.e.: (a) C3O: base 7:1, maximum 14:1; (b) C3R: base 5:1, maximum 10:1; (c) C3G: base 5:1, maximum 10:1; (d) C3S: base 3.5:1, maximum 7:1 (area of C3S applicable is greatly reduced - see item 6).

9. "Plaza bonus" formula is intended to be the same as described in the Downtown Growth Management Program by Bolles Assoc. "Plazas" section of proposed bonuses.

10. "Housing bonus" formula is intended to be the same as described by the "Housing" bonus proposed in the Downtown Growth Management Program by Bolles Assoc.

11. "Preservation bonus" formula would be the same as described in Section 4(a)1 of Proposition "O".

12. "Energy conservation bonus" formula is intended to be the same as proposed for the "Energy Conservation" bonus in the Downtown Growth Management Program by Bolles Assoc., except that the bonus amounts would be increased by five times the amounts specified there.

13. "Transportation bonus" formula is intended as follows:

$$\frac{\text{cost of transportation facility*} \times \text{base FAR project footage}}{\text{total construction cost (DCP estimate)}}$$

*cost of construction and/or ten-year cost of transportation services.

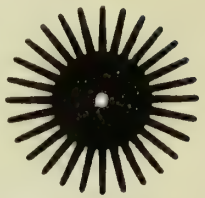
"Special transportation facilities" is intended to be defined as public transportation systems, not including facilities for private automobiles, not otherwise required as mitigation of project impacts (e.g. buying and operating a Golden Gate Bridge District ferry boat, 'people-mover' systems, etc.).

NOI: Tandem Housing Requirement for Office Development

See attachment for discussion.

14. SFRG does request one modification to a provision of the NOI: that the phrase "any kind of housing" be replaced with "housing affordable to various household income levels as a percentage of these units equal to the percentage distribution of the household incomes of the employees who will work in the proposed office building."

South of Market:
A Plan for San Francisco's Last Frontier



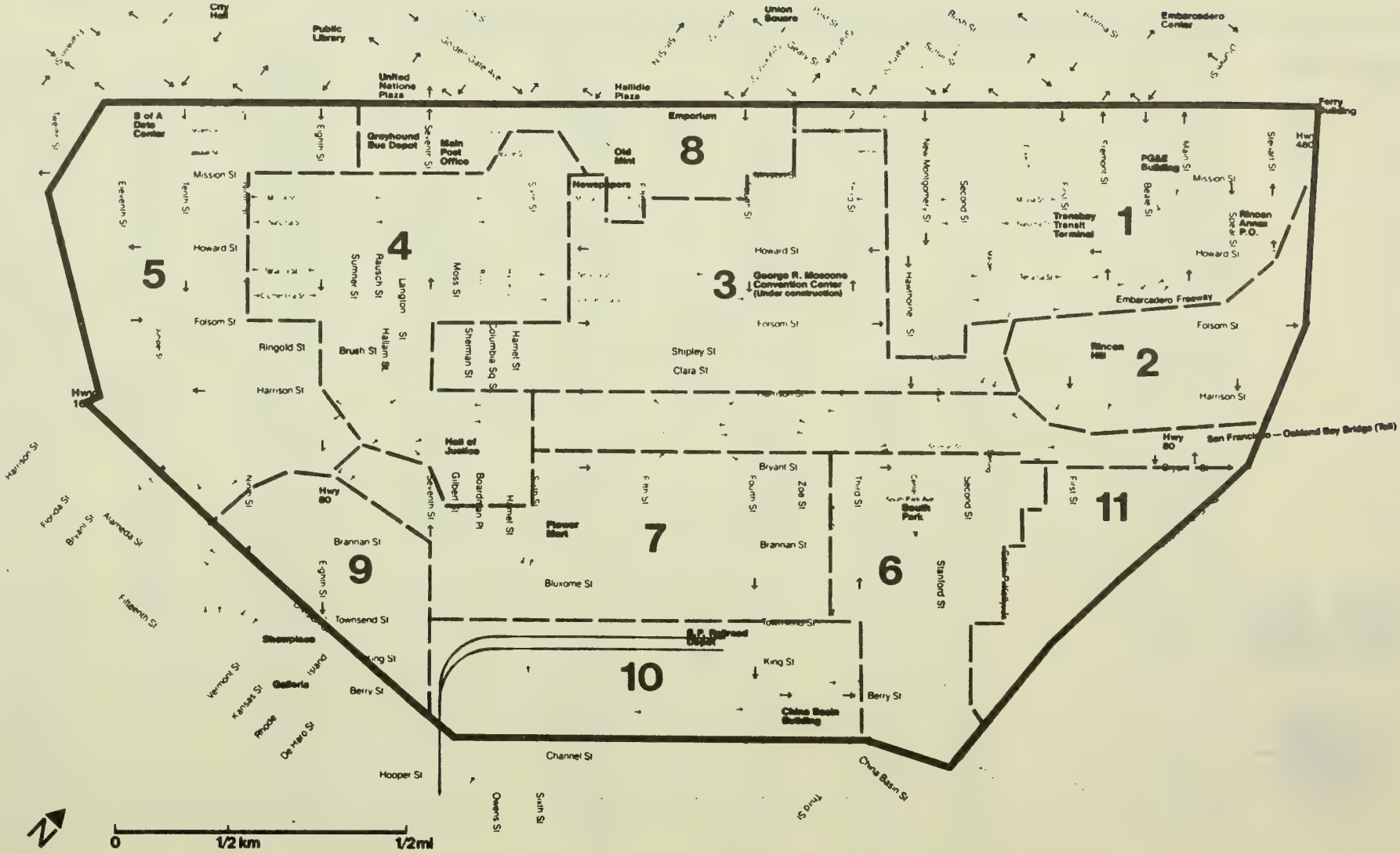
SPUR

B.4.6

June, 1981

Sponsored by the San Francisco Planning and Urban Research Association

Proposed Development Pattern



B.4.7



Fox Plaza: an example of a mixed-use housing/office development.

Context for Action

The beginning point for a public plan of action must be the post Proposition 13 context of a lack of public funds for accomplishing public goals. To the degree that public goals are met, they must largely be coaxed from the private sector. San Francisco, due to the strength of its office industry and the degree of interest in developing new office space in the city, is in a position to obtain cooperation from private developers in achieving good design, provision of amenity, mitigation of transportation impacts and even in provision of housing. However, there is a limit. The city's expectations and requirements for developers can be so onerous as to deter new development and become de facto limitations on growth. If the city wishes new development to continue, a balance should be struck between the needs of the city and the needs of developers. The cumulative effect of various "requirements" on developers should certainly be considered. Incentives often represent the better tool for achieving desired goals. Cooperation and flexibility should be the foundation for city efforts to achieve public ends from the private sector.

The following action plan is a summation of those things that the city can do now to begin to implement the recommendations in this plan. As with the previous chapter, this chapter is divided into four sections: development pattern (zoning), transportation, the environment, and housing.

Achieving the Development Pattern: Zoning

In order to indicate city intent and guide the private market, zoning is a necessary first step. By area, the following zoning is recommended (summarized in Table 1):

Area 1 • An Office Core with Housing

The intent is to achieve a high intensity office core with housing. The existing intense office zoning should be extended and housing should be strongly encouraged through various incentives including floor area ratio* (FAR) bonuses. Transfer of development rights should be allowed to be used anywhere in this district in order to increase commercial intensity above the base proposed. In a mixed-use development, consideration should be given to allowing residential parking requirements to be met off-site (within a short distance).

Area 2 • Rincon Hill Residential Community

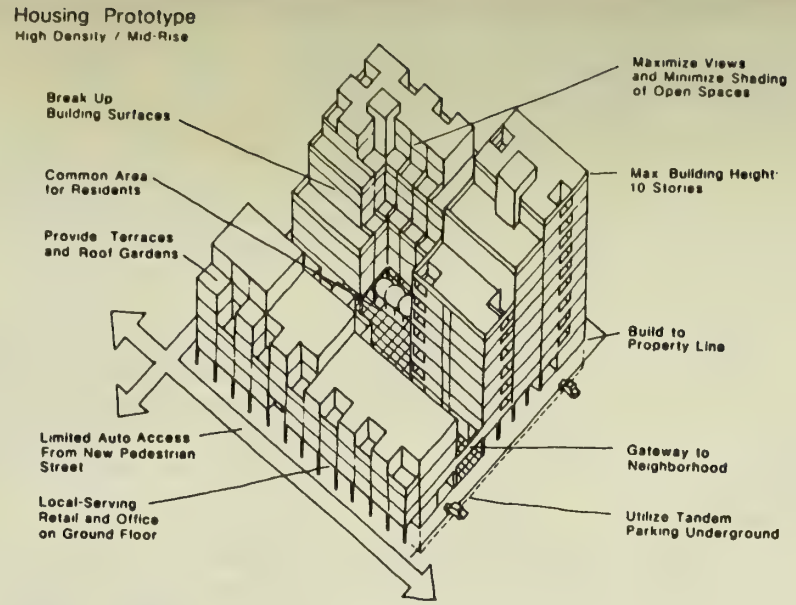
The high intensity mixed residential/commercial zone (R-C-4) which allows up to 210 units per acre and some commercial use is appropriate for this area. However, the current allowed maximum FAR for this zone may be too low. Existing height limits should be liberalized in parts of the area to allow for the appropriate residential intensities. This area has been designated for such use in the Planning Department's *Approaches* document.

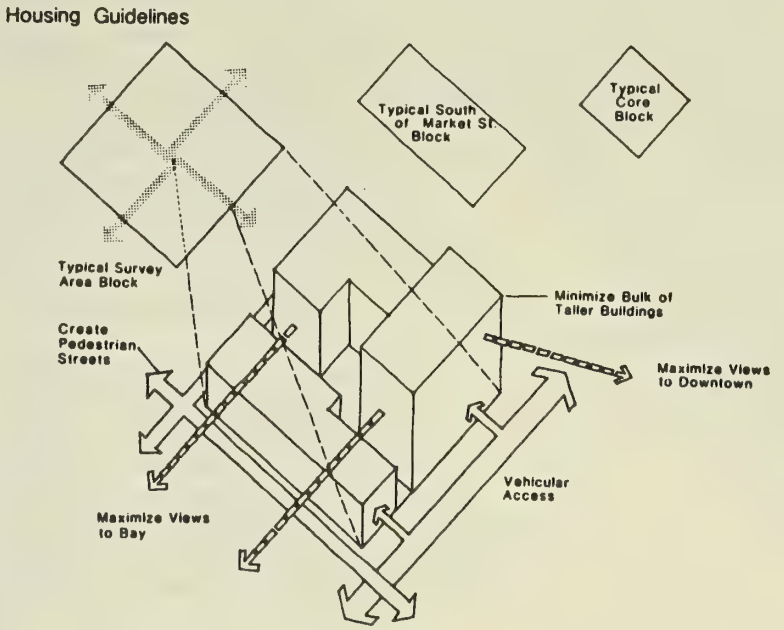
*Floor area ratio (FAR): The square feet of building allowed per square foot of land area. A 10:1 FAR would mean that a 10,000 square foot building could be built on a 1,000 square foot lot.

Table 1

Area	Uses						Zoning Category
	Housing maximum du/acre	Offices (Commercial) (FAR)	Manufacturing/ Light Industries	Distribution/ Office Services	Wholesale	Retail	
1	7:1 FAR bonus for housing on site	10:1 3:1 bonus for TDR	allowed	allowed	allowed	allowed	C-3-O modified
	maximum FAR: 18:1						
2	200 du/acre (6:1 FAR)	1:1	conditional	conditional	conditional	allowed	R-C-4 modified
3	160 du/acre	2:1	conditional	allowed	allowed	allowed	special
4	40 du/acre	conditional (accessory)	allowed	allowed	allowed	allowed	special
5	80 du/acre (Mission-Market Corridor: 200)	1:1	conditional	allowed	allowed	allowed	R-C-3 modified (Mission-Market Corridor: R-C-4)
6	60 du/acre	2:1	allowed	allowed	allowed	allowed	R-C-1 modified
7	not allowed	accessory only	allowed	allowed	allowed	allowed	M-1, M-2 modified
8	4:1 FAR bonus	3:1 3:1 TDR	conditional	allowed	allowed	required	C-3-G modified
	maximum FAR: 8:1						
9	conditional	conditional (primarily accessory)	allowed	allowed	allowed	allowed	special

Conditional: Use permitted is conditional on its not disrupting the basic character and use proposed for the area
FAR: Floor Area Ratio du: dwelling unit TDR: Transfer of Development Rights





(Drawings by ROMA)

Area 3 • Mixed Use, Housing and Commercial (offices)

There is no current zoning that would allow for both high density housing and a moderate intensity of commercial (office) use. This mixture is proposed in order to encourage residential development in this area and allow for a highly mixed environment.

Area 4 • A Special Low Intensity Mixed-Use Zone

There is no current zoning that preserves and encourages the kind of mix that exists in this area. Since the objective is to preserve the existing mix of light industry, housing, manufacturing, wholesaling, and other commercial uses, the city should minimize restrictions for development in this area. Basic safety, noise and fume-emitting performance standards for determining the acceptability of proposed uses should be established. Large scale development should be discouraged and office uses allowed only as an accessory use. Infill mixed-use (housing and commercial) should be encouraged.

Area 5 • A Moderate Intensity Residential-Commercial Area

A moderate intensity residential/commercial zone (R-C-3) is suggested for this area.

Area 6 • Low Intensity Mixed Housing and Commercial

Zoning for this area should be similar to Area 3 but at somewhat lower intensities. Conversion (rather than demolition) of existing warehouse structures should be encouraged as well as infill residential housing.

Area 7 • Modified Industrial Zone

The existing manufacturing/industrial zoning should be modified to allow offices only as an accessory use. A freeze on conversion of existing buildings to office uses should be instituted in this area immediately if the city intends to preserve it for industrial uses. The Redevelopment Agency might be an appropriate tool to encourage light industrial development in this area through capital improvements and small scale development.

Area 8 • Retail, Entertainment, Offices and Housing

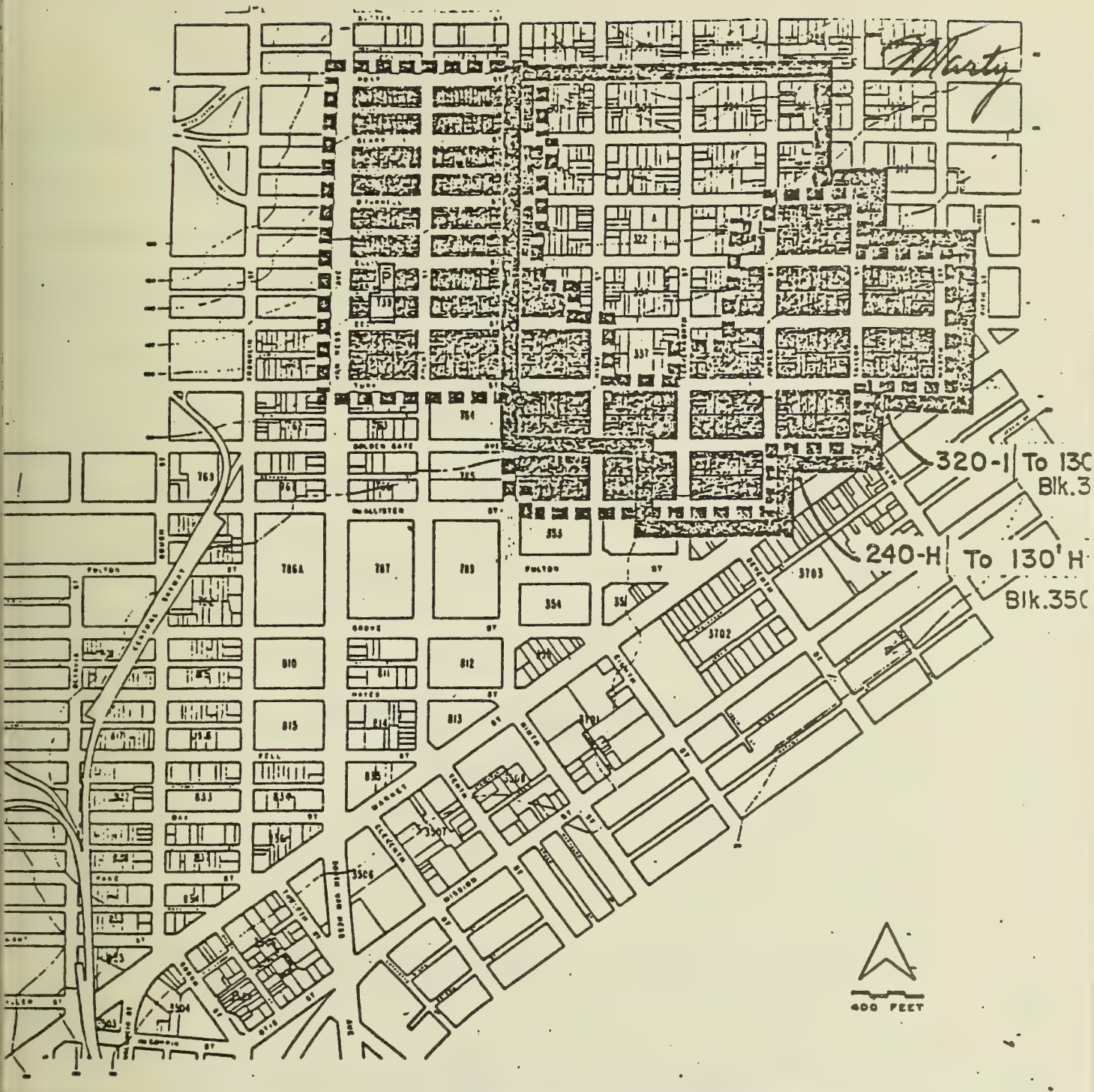
The objective here is to preserve the existing character and scale of development along much of Market Street while allowing for further development. Retail uses should be required at the ground floor and existing entertainment facilities should be retained and hopefully expanded. Transfer of development rights should be strongly encouraged with rights transferred outside of this district or bonuses used on site. It should not be a TDR receiving area except in specific locations.

Area 9 • Wholesale Showroom and Merchandising Area

The needs of this kind of use should be assessed and a special district established that will protect and encourage it. Residential uses would probably be appropriate in future expansion areas.

Area 10 • Housing and Parking

This area should receive special zoning attention to encourage its use for both parking and housing.



WORKING AREA LAND USE STUDY

CIVIC CENTER
81.254 EZ

WORKING AREA W · PLANNING AREA 3

North of Market Planning Coalition Reclassification

C-2 & C-3-G Boundary Area to RC-4 Excludes Block 739, Lots 4 & 13-(P)

130-E, 160F, 240-H & 320-I Boundary Area to 80 Foot Height Limit

FILED: May 29, 1981

GUIDING
DOWNTOWN
DEVELOPMENT

Department of City Planning
City and County of San Francisco

July 1982

TABLE OF CONTENTS

	Page
INTRODUCTION	1
ORGANIZATION OF THE REPORT	2
DOWNTOWN PLAN	2
RELATIONSHIP TO THE MAY 1981 EDITION OF GUIDING DOWNTOWN DEVELOPMENT	2
A. BUILDING SIZE, DESIGN AND APPEARANCE	
1. Reduce overall building size by lowering floor area ratio	4
2. Adjust heights to protect and enhance selected locations	5
3. Revise bulk controls to improve building appearance	10
4. Assure sunlight access to certain public spaces	13
5. Encourage design of more interesting rooftops	16
6. Encourage architectural embellishments	16
7. Strengthen urban design standards	17
8. Incorporate art works in or near new buildings	17
9. Provide for installation of street trees	18
B. RETAIL SERVICES	
1. Require and allow additional floor area for small scale, convenience retail space in new office development	18
2. Apply Master Plan policies regarding the amount of convenience retail space to be provided	18
3. Protect certain streets and alleys containing concentrated, small scale retail uses	19
4. Revise the boundaries of the retail district	19
C. RECREATION AND OPEN SPACE	
1. Require the provision of recreation and open space in proportion to building size	19
D. TRANSPORTATION AND CIRCULATION	
1. Implement a "transit first" downtown access policy	22

2. Improve circulation in and around the downtown 23

E. HOUSING

1. Require that developers of new office buildings also provide housing 24

2. Allow downtown buildings to be larger if they include housing 25

3. Assure that there is enough land for housing 26

4. Protect residential uses adjacent to the downtown from encroachment of commercial uses 27

5. Make changes in open space requirements, FAR calculations and rear yard requirements to encourage housing 28

F. PRESERVATION OF SIGNIFICANT BUILDINGS

1. Reduce the economic incentive to replace significant buildings by allowing transfer of the site's unused development potential 28

2. Provide an additional development allowance to encourage retention and restoration of significant buildings 29

3. Carefully control new development in areas with concentrations of significant buildings 30

4. Redirect growth to other downtown locations 30

G. INDUSTRY

1. Protect industry from disruptive effects of office and housing development 32

APPENDICES

Page

APPENDIX A: BUILDING SIZE, DESIGN AND APPEARANCE

Part 1: Permitted Floor Area: Proposed Planning Code Text A-1

Part 2: Heights in Transitional Height Zones: Proposed Planning Code Text A-3

Part 3: Exception to Height Limits for Rooftop Structures: Proposed Planning Code Text A-4

Part 4: Bulk Limitations: Proposed Planning Code Text A-5
Part 5: Setback Requirements for Sunlight Access on Certain Streets: Proposed Planning Code Text A-6
Part 6: Architectural Embellishments: Proposed Planning Code Text A-10
Part 7: Downtown Urban Design Policies: Proposed Master Plan Text A-11
Part 8: Works of Art: Proposed Planning Code Text A-23
Part 9: Requirement of Installation of Street Trees: Proposed Planning Code Text A-23

APPENDIX B: RETAIL SERVICES

Part 1: Retail Sales and Personal Services Space Requirements in New Development: Proposed Planning Code Text B-1
Part 2: Downtown Commercial Recreation Districts: Proposed Planning Code Text B-2

APPENDIX C. RECREATION AND OPEN SPACE

Part 1: Downtown Recreation and Open Space Policies: Proposed Master Plan Text C-1
Part 2: Downtown Recreation and Open Space Requirements: Proposed Planning Code Text C-4
Part 3: Guidelines for Recreation and Open Space Features: Proposed Administrative Guideline Text C-7

APPENDIX D: TRANSPORTATION AND CIRCULATION

Part 1: Downtown Parking Districts: Proposed Planning Code Text and Maps D-1
Part 2: Requirements for Off-Street Loading and Service Vehicles; Controls on Access from Transit Preferential Streets and the Primary Pedestrian Network: Proposed Planning Code Text and Maps D-6

APPENDIX E: HOUSING

Part 1: Proposed Use Districts for New Residential Areas: Proposed Planning Code Text E-1
Part 2: Modified Open Space Requirements, F.A.R. Calculations and Rear Yard Requirements: Proposed Planning Code Text E-2

APPENDIX F: RETENTION OF SIGNIFICANT BUILDINGS

Part 1: List and Map of Architecturally and/or Historically Significant Buildings and Landmarks in C-3 Districts F-1

Part 2: Transfer of Development Rights and Retention and Restoration Allowances: Proposed Planning Code Text F-14

Part 3: Downtown Conservation Districts: Proposed Planning Code Text F-16

Part 4: List of Contributory Buildings in the Proposed Downtown Conservation Districts F-20

Part 5: Special Development Districts: Proposed Planning Code Text F-24

APPENDIX G: INDUSTRY

Part 1: Conditional Uses in Industrial Areas: Proposed Planning Code Text G-1

APPENDIX H: EXISTING MASTER PLAN POLICIES

Part 1: Commerce & Industry Element H-1
Part 2: Residence Element H-7
Part 3: Urban Design Element H-8
Part 4: Transportation Element H-14

MAPS

Page

Map 1. Existing Height Districts 7
Map 2. Proposed Height Districts 8
Map 3. Sunlight Access 14
Map 4. Expanded Retail District, Areas for New Development, Special Development Districts 20
Map 5. Significant Buildings and Designated Landmarks and Downtown Conservation Districts 31
Map 6. Downtown Parking Districts D-5
Map 7. Downtown Transportation Plan H-33

GUIDING DOWNTOWN DEVELOPMENT

INTRODUCTION

This report contains a series of regulatory proposals for managing development in downtown San Francisco. The proposals affect the size, design, and location of major buildings. They also deal with the effect new development has on housing, transportation, and open space, on significant older buildings, and on the general livability of the central business district.

Planning Code regulations for the C-3 districts have not been analyzed comprehensively for some time. Most of the existing controls are based on studies completed sixteen years ago, ten years ago in the cases of height and bulk. During the past decade downtown has nearly doubled in available space. San Francisco, with a current office inventory of over 50 million square feet, is currently experiencing an unprecedented level of downtown office development with 6.8 million square feet currently under construction. The five year period 1980-1984 will see 10 million square feet of additional office space completed. In addition, over 8 million square feet of office space has been approved for construction and 8 million square feet are under review. Whether this growth is good or bad for the city or whether it should advance at current levels, be slowed, or stopped altogether, remains a controversial issue in San Francisco. To enlighten the debate, groups with differing views are supporting the preparation of a downtown EIR. The main purpose of that study is to examine the various alternative proposals for dealing with issues of downtown growth. The recommendations contained in this report will be one of the alternatives evaluated in the downtown EIR. The other alternatives will be a Chamber of Commerce proposal, a proposal developed by San Franciscans for Reasonable Growth, the provisions of the Proposition O highrise initiative, a proposal to limit office growth annually to 1.8 million square feet, and the existing Planning Code regulations.

The Department considers the recommendations in this report, based on a thorough examination of recent development and on extensive experience in applying existing controls, to represent appropriate, effective, and desirable approaches

-- for creating buildings in scale and shape more suitable to San Francisco's environment;

-- for meeting the housing, open space, and transportation needs created by downtown development;

-- for preserving significant older buildings and their setting, and

-- for providing amenities that make downtown a special place.

Like all urban change, downtown growth has some advantages and some disadvantages. The recommendations seek to maximize the

advantages and minimize the disadvantages. The recommendations are demanding, but the Department of City Planning believes they are essential steps to take to conserve our city's urban scale and environment, two critical elements making San Francisco unique among the nation's urban centers.

The Department's proposals are designated to regulate the physical form and location of new development. They do not limit the amount of growth that would be permitted over a fixed period of time. However, other alternatives to be tested in the downtown EIR would do exactly that. One proposal would limit growth to 1 million square feet per year, and another would limit it to 1.8 million square feet per year. In the downtown EIR the Department's proposals will be analyzed both with those annual limitations and without them. The desirability of adding specific growth limitations to the Department's proposals can be determined when the results of the downtown EIR study are known.

ORGANIZATION OF THE REPORT

The proposals are presented in this report under the following headings: Building Size, Design and Appearance; Retail Services; Recreation and Open Space; Transportation and Circulation; Housing; Preservation of Significant Buildings; Industry; and Cumulative Impact Assessment. The proposals by and large implement existing policies in the Master Plan. However, in a number of instances, new policies are proposed. The existing Master Plan policies appear in Appendix I. The proposed new policies and proposed new Planning Code provisions to implement the Department's proposals appear in appendices referenced in the text below.

DOWNTOWN PLAN

These proposals, modified as deemed appropriate in light of public comment and the analysis provided in the Downtown EIR, will be more formally presented in a Downtown Plan which would be proposed for adoption as part of the Master Plan. This Downtown Plan will be released for public review and comment at the time the draft downtown EIR is published. Formal public hearings on the proposed Downtown Plan and Planning Code changes and the Downtown EIR will be held by the City Planning Commission at that time.

RELATIONSHIP TO THE MAY 1981 EDITION OF GUIDING DOWNTOWN DEVELOPMENT

The Department of City Planning released Guiding Downtown Development in May 1981. At that time the City Planning Commission adopted Resolution 8982 which, among other things, required individual project EIRs to prepare an alternative which conformed to the proposals contained in Guiding Downtown Development. One

purpose of that resolution was to enable the staff to test and evaluate its proposals. Since that date an unprecedented number of projects has been presented to the Department providing the staff a unique opportunity to assess the efficacy of its proposals. In light of that experience, and in order to incorporate other work that the staff has done in preparing the Downtown Plan, the staff is presenting for analysis in the Downtown EIR a number of changes in the May 1981 edition of "Guiding Downtown Development."

The major changes are:

- o revision of the proposed height map;
- o revision of the proposed bulk controls;
- o introduction of mandatory setback on certain streets to prevent shadowing of important public spaces;
- o new rules to improve rooftop appearance;
- o changes in the C-3-R boundary to incorporate part of Kearny Street;
- o changes in the C-3-G boundary to exclude the predominantly residential portions of the Tenderloin;
- o modification of the transfer-of-development rules;
- o incorporation of recent changes in the Downtown section of the Transportation Element;
- o modification of parking controls;
- o modification of off-street loading requirements pursuant to Resolution 9286;
- o presentation of tentative ratings of buildings which are candidates for addition to the significant building list.

A. BUILDING SIZE, DESIGN AND APPEARANCE

Concern: That downtown development not result in dark, crowded, and windy streets, poor interrelationship between buildings, and an awkward and unattractive skyline.

Approaches:

(1) Reduce Overall Building Size by Lowering Floor Area Ratios

It is proposed that the base Floor Area Ratio (FAR) be revised to reduce the permitted intensity of development in various C-3 districts as follows:

	C-3-O	C-3-R	C-3-G*	C-3-S*
Maximum Base Floor Area Ratio	12	6	8	6

Additional FAR above the base FAR figure would be allowed to accommodate on-site housing. Additional FAR for housing will provide an incentive to build housing downtown, thereby helping to meet the housing shortage, and will serve to increase the vitality of downtown by expanding its use to evenings and weekends. To avoid placing additional pressure on architecturally and/or historically significant buildings, the housing allowance could not be used on sites containing such structures.

The proposed FAR housing allowances are as follows:

	C-3-O	C-3-R	C-3-G	C-3-S
FAR Housing Allowance	5	3	4	2

It is further proposed that additional FAR be allowed to be transferred from a noncontiguous site or sites in the C-3 districts containing either: (1) an architecturally significant building to be restored and retained, or (2) a new street level urban park. Allowing increased FAR on the development site in these instances would provide a useful tool for preserving landmarks and other architecturally and/or historically significant buildings and for achieving additional downtown open space. It would not increase overall development density downtown but merely transfer it from one site to another. The density of development on the development site will be limited by height and bulk rules and concern for provision of light and air to adjacent properties.

To assure adequate employee/pedestrian services and amenities at street level qualifying recreation and open space and, in all districts except C-3-R, small-scale convenience retail space would not count against allowable FAR.

---

* including the Central South of Market R/C overlay. See Map 4.

It is also proposed that the formula for determining the FAR of C-2 districts and other districts in the vicinity of downtown be modified in keeping with the C-3 changes. The modifications are as follows:

Other Districts

	C-2	CM	Auto Sp.use
Maximum FAR	4.8*	5	6

*for lot nearer to RM-4, RC-4, or C3 than any other R or C district

In order to prevent the erosion of these FAR controls, the anned Unit Development provision in the City Planning Code (Sec. 4) should be modified to prohibit an increase in FAR in Planned it Developments except as otherwise allowed in the Code.

(2) Adjust Heights to Protect and Enhance Selected Locations

The existing allowable heights should be modified in a number of areas to achieve the following objectives:

a. Protect the scale of development in the retail district.

b. Insure adequate sunlight to the new Tenderloin Park, St. Mary's and Portsmouth Square; and the Chinatown Playground by lowering heights to the south of the parks.

c. Insure adequate sunlight and spatial definition to the major plazas on Market Street and continued sunlight to the retail portion of Market Street by lowering heights on the south side of the Mid-Market Street frontage.

d. Shift new high rise office development to selected areas south of Market Street by increasing permitted heights in these areas and lowering heights north of Market, reducing the heights stepping down northward from the area of highest height limit in keeping with the relocation and reduction in size of that area.

e. Protect the scale of existing development along Kearny Street.

f. Soften the visual impact of the Federal Building's block long slab form by increasing height in a small area north of the Federal Building tower to allow slightly higher development.

g. Insure that the facades of new buildings properly frame the Mint and the Seventh Street Post Office by lowering height limits on the fronting portions of surrounding properties.

The proposed heights to implement these objectives and minor adjustments resulting from their interaction are shown on Map 2. Map 1 shows existing heights.

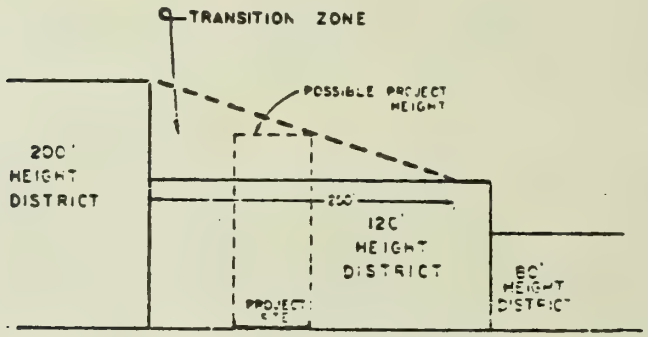
Additional building height could be granted, subject to conditional use approval, in the transitional zone between height districts. The objective in granting the increase would be to improve the urban form transition between height districts in accordance with the design principles set forth in the Urban Design Plan.

Additional height could be granted only when the following conditions are met:

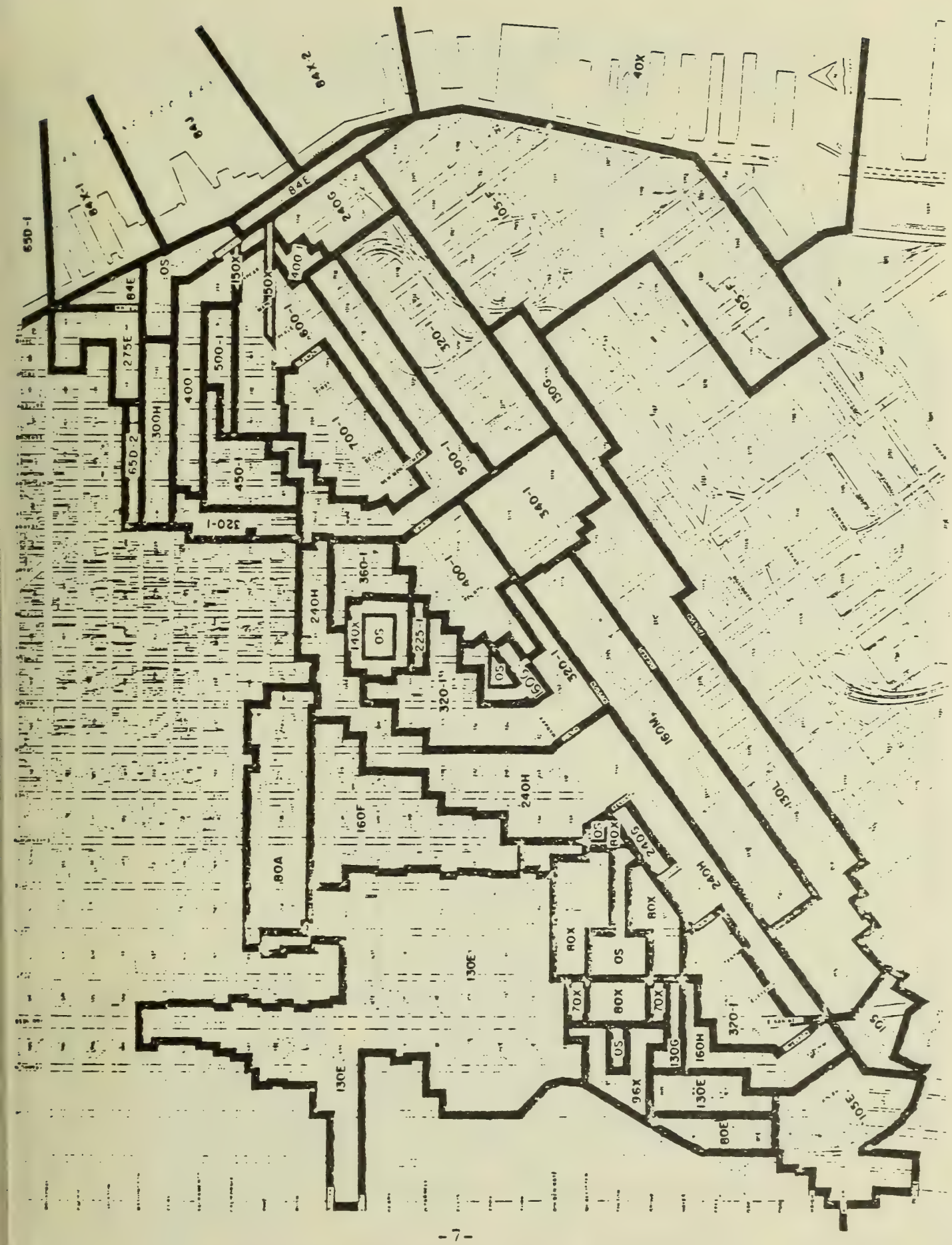
1. The project is within 250 feet of the boundary of the nearest height district which is higher than the height district in which the project is located.

2. The proposed project will not penetrate a plane which is the hypotenuse of a right angle triangle the vertical dimension of which is the difference between the height district in which the project is located and the nearest higher height district and the horizontal dimension of which is 250' or the width of the height district in which the project is located, whichever is shorter.

Example:



SECTION THROUGH SITE SHOWING HEIGHT DISTRICT



EXISTING HEIGHT DISTRICTS

B.5.7

MAP I


EXISTING C3-G BOUNDARY
PROPOSED C3-G BOUNDARY
C-3 DISTRICTS BOUNDARY
PROPOSED HEIGHT DISTRICTS
OPEN SPACE

3. The overall form of the building is appropriate to the context, working with nearby buildings to produce a graceful, coherent city form.



4. The project relates harmoniously to nearby structures of historic and/or architectural merit, and, if necessary, provides transitionally scaled sub-elements, to minimize extreme differences in scale.



5. The increased height does not result in project being of similar height as nearby buildings or otherwise contributes to the impression of benching.



6. The increased height does not result in the shading of outdoor recreational space, publicly accessible sitting and sunning areas.

The proposed Planning Code text appears in Appendix A: Part 4, p. A-6.

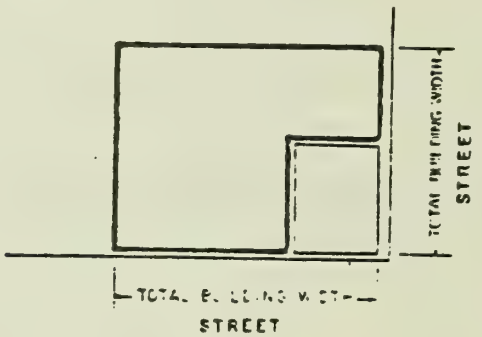
(3) Revise Bulk Controls to Improve Building Appearance

It is proposed that the existing bulk controls be changed to encourage the sculpturing and articulation of building form, leading to less overpowering building design and the evolution of a more attractive and interesting skyline. The controls would apply in all height districts shown on Map 2 by the letter S.

The proposed bulk controls would be determined by the building height, not by the height district in which the building is located. For example, a 200 foot high tower located where height controls would permit a 400 ft. high tower would be governed by the bulk controls applying to a 200 foot tower.

The bulk controls consist of horizontal dimensional restraints that apply to the lower two thirds of a building's height and floor area reductions applying to the top third aimed at producing a slim tapering form. The controls recognize the basic urban design principle that the impression of awkward bulkiness is offset if the top of the building is relatively light and tapering. Reduction of the massiveness of the upper portions of a building also effectively increases the amount daylight and sunlight reaching the street.

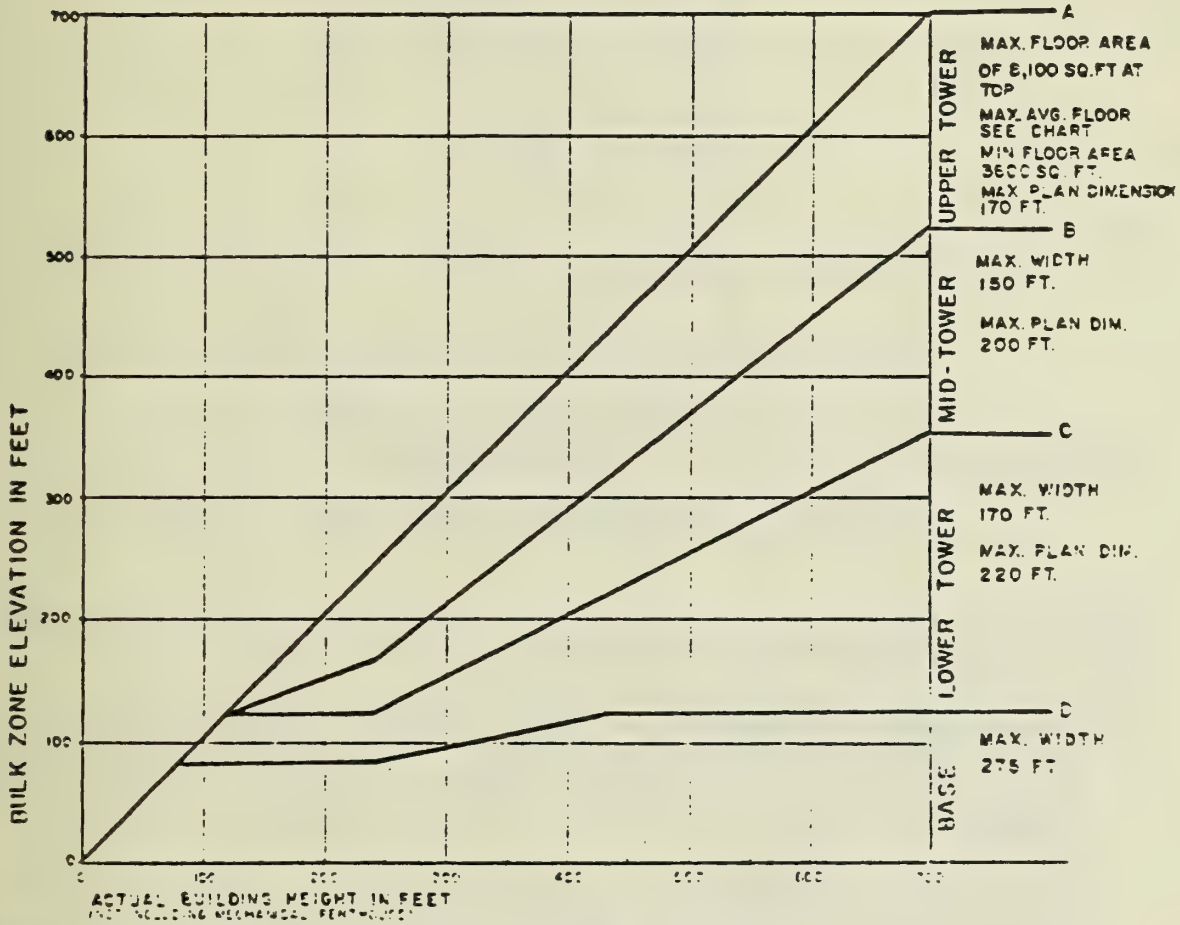
Two kinds of dimensional limits are required by the controls: maximum width and maximum plan dimension. Maximum width is the total building width as measured along the surrounding street grid.



The Maximum Plan Dimension is the distance between the two most distant points on the building plan. Balconies and projecting decorative features are excluded from this measurement.

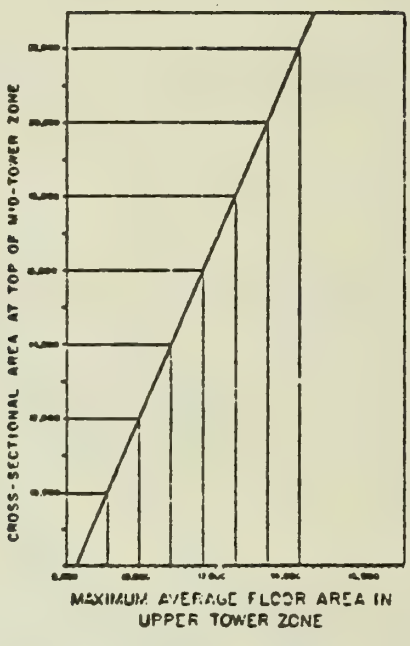


The bulk limitations are shown in the Bulk Zone chart below. Bulk limitations can be determined by locating the height of the building along the bottom of the chart and from that point drawing a vertical line intersecting the zone lines on the chart. The elevations at which the zone division lines are intersected indicate the elevations at which the progressive dimensional restraints listed on the right apply.



BULK CONTROL ZONE CHART

The Upper Tower Zone, consisting of approximately the top third of a building, requires that the floor size progressively diminish in area toward the top to a maximum floor size of 8,100 sq. ft. at the top. The maximum average floor area within this zone is set forth in the Upper Tower Floor Area chart below. The floor area or crossection planned at the top of the Mid-Tower Zone determines the average floor area.



UPPER TOWER FLOOR AREA CHART

Exceptions to these bulk controls could only be granted where the following conditions prevail:

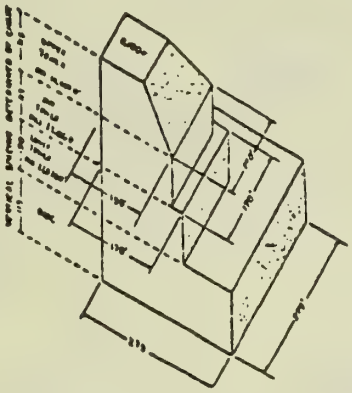
a. The proposed building or that portion of the building for which an exception is requested is screened from city views by surrounding buildings of equal or greater height on all sides.

b. The project respects the scale, sense of viability and character of nearby buildings of architectural merit, providing, where appropriate, transitionally scaled features.

c. The additional bulk does not shade publicly accessible sitting and sunning areas.

d. Extended facades, over 170 feet in width, are subdivided into distinctive sub-elements, and are accented at the pedestrian level by major design focal points such as dramatic entranceways or large scaled decorative features.

The following diagrams illustrate the maximum bulk envelope in a 400 foot tower under the proposed bulk controls and two examples in which the Upper Tower requirements are applied.



The proposed Planning Code text appears in Appendix A: Part 3, p. A-4.

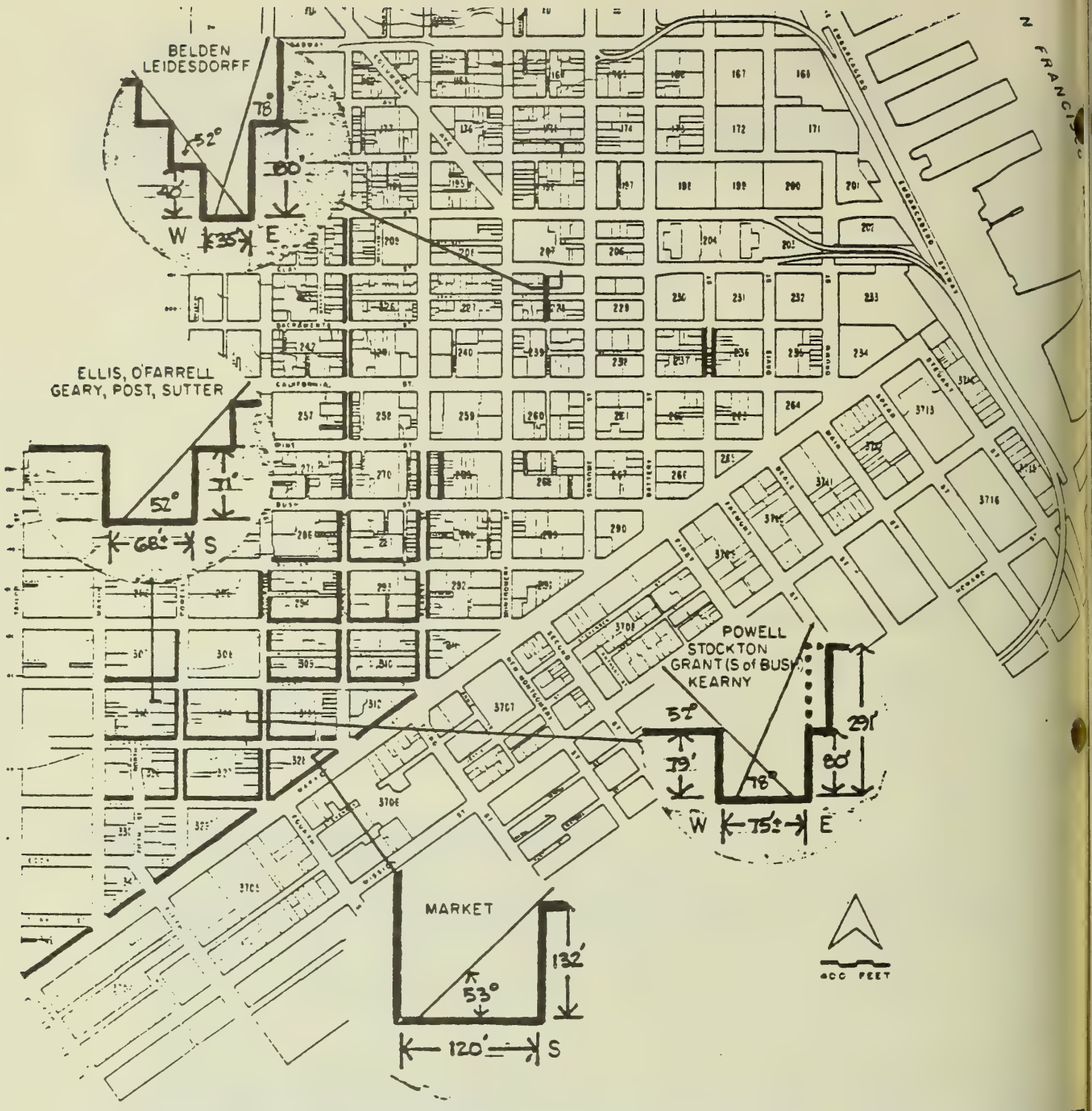
(4) Assure Sunlight Access to Certain Public Spaces

There are certain locations in the downtown where direct sunlight is very important. They include: public parks and plazas, shopping streets in the retail district, and alleys with a high concentration of eating and drinking establishments and a high volume of lunch time pedestrian use.

Given San Francisco's temperate climate, the warmth provided by direct sunlight can make a significant difference in the physical comfort experienced in these spaces. New buildings adjacent to these spaces should be shaped to minimize the shadow that is cast by the building on the public space. By keeping the new building behind a sloping plane which varies according to orientation of the sun to the public space, direct sunlight access can be maintained during critical hours.

It is proposed that development on parcels adjacent to the streets shown on Map 3 be required to respect sunlight access angles above a certain street wall height as shown on the map. The requirements are preliminary and are being refined.

In certain other locations, where tall buildings would be desirable (such as the C-3-0 district, the Special Development Districts and in other high height districts), it is not reasonable to require all development to respect sunlight access angles. However, the massing of new buildings in these areas should take into account sunlight access criteria and respect them to the maximum extent feasible. The sunlight access criteria in these areas are as follows:



SUNLIGHT ACCESS

PROTECTED SIDEWALKS

Map 3

Fremont, Beale, Main, Spear, Steuart, First, Second, New Montgomery, Third

Maximum street wall height and angle of slope are being developed

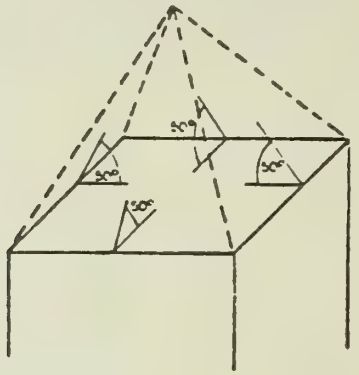
Mission, Howard, Folsom
South side of street

Maximum street wall height 92' angle of slope 53°

Sunlight access requirements for public open spaces in the C-3 district such as Portsmouth Square, Chinatown Playground, St. Mary's Square, and the new Tenderloin Park, are being developed and will be published at a later date.

(5) Encourage Design of More Interesting Roof Tops

Currently the only major exception to height limits is the exception for mechanical equpment. The appearance of the tops of buildings could be improved by allowing additional exceptions. It is proposed that mechanical equipment, decorative roof construction, penthouse space and/or recreation and open space be allowed above the height limit, and without being counted against allowable FAR, provided that it is within the area formed by planes sloping inward at a 50° angle from the outer edge of the roof.



(6) Encourage Architectural Embellishments

Two changes in the code would lead to better building design.

a. Allow Architectural Projections

Currently cornices and belt courses are severely restricted in size and other decorative embellishments, such as pilasters, are prohibited. Cornice and belt course size limitations would be eased and other features of an architectural or decorative nature would be allowed to project up to one foot, provided they were not used to increase the floor area. All such projections would be prohibited below the height of 7 1/2 feet above sidewalk grade.

b. Revise Rules for Measuring Floor Area Ratio

Currently FAR is measured from the exterior faces of the exterior walls. The desire to maximize net rentable floor space tends to produce smooth skinned buildings, which provide little sense or weight and mass, and which fail to define street or other open spaces well. To remove this pressure, it is proposed that hereafter FAR be measured to the glass line at windows and to an exterior plan excluding decorative non-structural features that do not increase the usable floor area.

The proposed Planning Code text implementing these proposals appears in Appendix A, Part 4, p. A-6.

(7) Strengthen Urban Design Standards

All new buildings should conform to strengthened urban design policies and principles designed to achieve the following objectives:

a. create and maintain interesting street frontages and a comfortable human scale in downtown streets;

b. conserve the traditional street and building relationship that characterizes downtown San Francisco;

c. insure that large new facades relate harmoniously with nearby facade patterns and do not contribute to an unpleasant streetscape;

d. make new buildings sympathetic to the scale, form and proportions of older buildings, particularly those of outstanding quality;

e. preserve historically and architecturally significant buildings;

f. develop a graceful skyline in harmony with the texture of development on surrounding hills.

The policies, which appear in Appendix A, Part 5, p. A-10, would be incorporated in the Master Plan as the Downtown Urban Design section of the Urban Design Element and used in design evaluation during the project approval process.

(8) Incorporate Art Works In or Near New Buildings

Artwork should be required to be incorporated in or adjacent to the project, the amount of art to be based on its cost. It is proposed that 1% of the total construction cost of the project be required to be invested in art works. This approach has been successfully used by the Redevelopment Agency in its downtown redevelopment projects.

The artwork could be sculpture, bas-relief, mosaics, murals, paintings or tapestries.

The artworks could be located on-site in publicly accessible areas or off-site on adjacent public property. Artworks located on public property would require the approval of the Art Commission and the public agency controlling the property. Artworks to be placed on-site would be reviewed by a panel of art professionals appointed by the Director of Planning; the panel's opinion would be advisory to the developer.

The proposed Planning Code text appears in Appendix A, Part 8, p. A-23.

(9) Provide for the Installation of Street Trees

Street trees should be required to be installed to enhance the physical surroundings of the building. They should be located and installed in a manner that will not impede pedestrian movement. (See Appendix A, Part 7, P. A-22 for the proposed Planning Code text.)

B. RETAIL SERVICES

Concern: That new office buildings not displace small scale retail shops, services and restaurants without adequate provision for their replacement.

Approach:

(1) Apply Master Plan Policies Regarding the Amount of Convenience Retail Space to be Provided

As part of the project's environmental assessment there should be an analysis of the demand for retail space generated by the project. In the project review process the following Master Plan policies should be applied:

(i) Provide adequate amenities for those who live, work and use downtown ... Land use controls should assure an adequate supply of convenience shopping and eating facilities (Policy 4, Downtown Office Section of the Commerce and Industry Element).

(ii) Devote ground floor space fronting on streets, pedestrian ways, plazas, and courtyards to retail uses which are of interest to pedestrians and which meet the need of customers generated by the proposed building and nearby buildings (Objective 1, Policy E of the Proposed Downtown Urban Design Section of the Urban Design Element).

(iii) Support the Continued Strength of High Quality, Specialty Retail Shopping Facilities in the Downtown Core ... The amount of retail space allowed in new developments outside the retail core should be controlled to assure that the strength of the core is not depleted by competing retail centers (Policy 2, Downtown Retail Section of the Commerce and Industry Element).

(2) Require and Allow Additional Floor Area for Small Scale Convenience Retail Space in New Office Development.

Ground floor space devoted to small scale uses (not to exceed 2,000 feet per establishment) designed to meet the convenience retail shopping, service and eating needs of downtown workers and to provide active frontages along streets, pedestrianways, plazas and courtyards abutting the

development would not count against allowable FAR. The allowance should apply only in the C-3-O, C-3-G, and C-3-S districts. (See Appendix B, Part 1, p. B-1.)

(3) Protect Streets and Alleys Containing Concentrated, Small Scale Services

Intimate, small scale, pedestrian oriented streets containing clusters of restaurants, shops and lounges are important attributes of the downtown. Such clusters have developed or are developing spontaneously in several downtown streets and alleys. Retention of the character of these areas is important to the continued prosperity and livability of the downtown. The streets are:

Commercial	between	Battery and Kearny
Leidesdorff	"	Clay " Pine
Trinity	"	Bush " Sutter
Compton/Tillman	"	Sutter and Post and Stockton off Grant
Maiden Lane	"	Stockton and Kearny
Belden	"	Pine " Bush
Front	"	California " Sacramento
Ecker	"	Stevenson " Mission
Annie	"	Market " Mission
Jessie	"	New Montgomery and Fifth
Natoma	"	Second and eastern half of block between Montgomery and 3rd Street
Hardie Place	"	Sutter and Bush off Kearny
Security Pacific	"	Stockton and Grant off O'Farrell

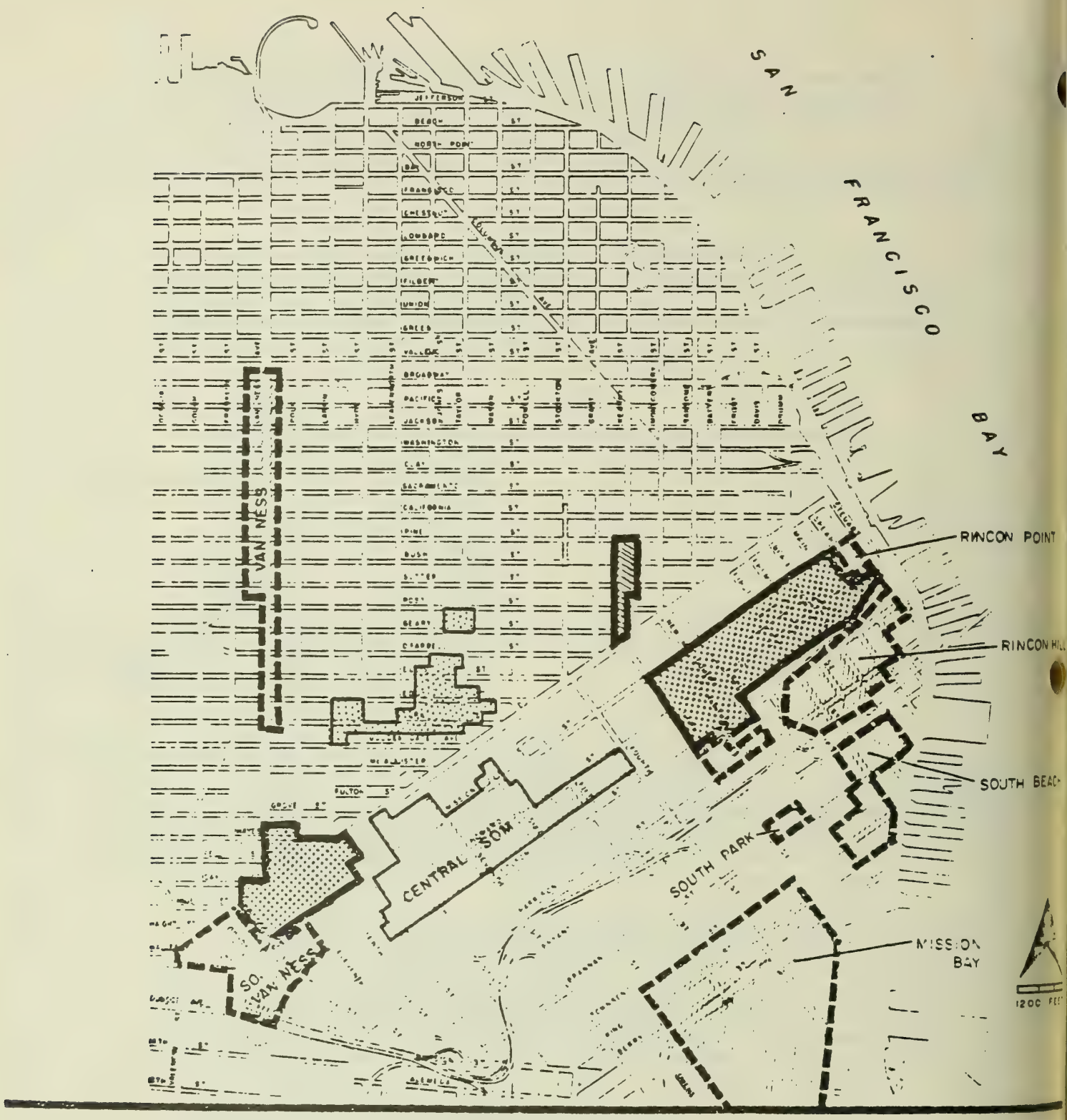
These streets should be designated special use districts and new development made conditional on preserving the character and scale of existing development and a sunlight street frontage composed predominantly of small shops and food and beverage services. (See Appendix B, Part 1, p. B-1 for proposed Planning Code text).

(4) Revise the Boundaries of the Retail District

The boundaries of the C-3-R district should be revised to incorporate those portions of the Kearny and Belden Street frontages which continue to function as part of the retail district (See Map 4, p. 19). Other boundaries of the C-3-R district are being examined for possible modification.

C. RECREATION AND OPEN SPACE

Concern: That new development not so congest existing downtown open space and recreation space that there will be inadequate places for quiet relaxation in the open air and sunshine or for more active recreational pursuits.



SPECIAL DEVELOPMENT DISTRICTS

RETAIL DISTRICT EXPANSION

C-3-G DISTRICT CONTRACTION

AREAS FOR NEW RESIDENTIAL DEVELOPMENT

MAP 4

Approach:

(1) Require provision of recreation and open space in proportion to building size

It is proposed that each development be required to provide recreation and open space in an amount directly proportional to the building size. The proposed ratios are as follows:

C-3-O	C-3-R	C-3-G	C-3-S
1:25*	1:40	1:30	1:50

*1 sq.ft. of recreation and open space for each 25 gross sq.ft. of building floor area.

These ratios take into consideration the density of employees and visitors typical of development in the various C-3 zoning districts.

The required recreation and open space could be provided in a variety of ways. It could be a plaza, a through block pedestrian way, a garden park, a sun and view terrace, a cultural facility, a galleria, a recreation facility, or a combination thereof on the building site. These recreation and open spaces would be required to meet certain minimum guidelines in addition to conforming to Master Plan policies (see Appendix C, Part 3, p. C-6).

Many of the permitted kinds of recreation and open space areas could be located above the ground level. Certain features (an urban park or a cultural or recreational facility) could be located off-site in an approved location within or immediately adjacent to the same C-3 district. Under certain special conditions, the ground area of an offsite recreation and open space on privately owned property could be counted in computing the allowable FAR for the project. If it is located on public land the ground area could be counted against the recreation and open space requirements but not in computing the allowable FAR.

In small projects, where provision of an on- or off-site recreation and open space area is not feasible because the area would not be of useful size, the provision of improvements and amenities (and an agreement to maintain them) on some nearby public space which make it more functional as usable open space (e.g. small sidewalk sitting areas) would be permitted.

This approach would implement proposed new policies to be incorporated as the Downtown section of the Recreation and Open Space Element of the Master Plan (See Appendix C, Part 1, p. C-1). The proposed Planning Code text appears in Appendix C: Part 2, p. C-4).

The recreation and open space ratios would not apply to any residential space in the structure; residential use would have its open space requirements as set forth in Section 135 of the Planning Code. However, certain of the recreation and open space features which can be provided under the requirements above (i.e. sun and view terraces, plazas and garden parks) could also count as the common useable residential open space permitted by the Code. Such common space would be counted as both residential and commercial open space.

D. TRANSPORTATION AND CIRCULATION

Concern: That further downtown development not result in intolerable congestion of all transportation, parking and pedestrian circulation facilities.

Approach:

(1) Implement a "transit first" downtown access policy

Because of limited road capacity and because of energy efficiency and air pollution considerations a "transit first" downtown access policy should be vigorously implemented. In lieu of requiring on-site parking new development should contribute to expansion of the local and public transportation systems including supplemental transit shuttle services. Building managers and employers should take steps to encourage employee use of public transit. The number of single occupant commuter vehicles should be reduced and car pools and van pools encouraged. The amount of additional commuter parking allowed should be restricted to that required for those trips which cannot reasonably be made by transit.

Approval of all new downtown development should be subject to the following conditions:

1. In recognition of the need for expanded transportation services to meet the peak demand generated by cumulative commercial development in the downtown area, the project sponsor shall contribute funds for maintaining and augmenting transportaton service, in an amount proportionate to the demand created by the project, through a funding mechanism developed by the City.

2. The project sponsor shall employ a transportation broker responsible for coordinating, implementing and monitoring programs among tenants and employees to encourage transit use and ridesharing, including but not limited to the following: on-site sale of BART tickets and Muni passes and employer subsidized transit passes, establishment of an employee carpool/vanpool system in cooperation with RIDES for Bay Area Commuters or other such enterprises, and a preferential parking program for employee carpool and vanpool vehicles.

3. The proposed building shall include a reasonable number of safe and secure bicycle and/or moped parking spaces.

4. The project sponsor shall: (i) participate with other project sponsors and/or the San Francisco Parking Authority in undertaking studies of the feasibility of constructing an intercept commuter parking facility in an approved location to meet the unmet demand for parking for work trips generated by the project which cannot reasonably be made by transit and (ii) participate with other project sponsors and/or the Municipal Railway in studies of the feasibility of the establishment of a shuttle system serving the project site and the parking facility. (Map 6 on p. D-5 of Appendix D identifies potential peripheral parking sites).

(2) Improve circulation in and around the downtown in the following ways:

a. Require any needed new long-term (commuter) parking to be located on the periphery of the downtown (C-3 districts) and linked to downtown by transit, and new short-term (visitor, shopper) parking be immediately adjacent to, but not in, the core as defined in the Master Plan. This approach would be carried out by creating special downtown parking districts. Appendix D, Part 1, p. D-1 contains the proposed Planning Code text and a map showing the boundaries of the proposed districts.

b. Seek the conversion of existing long-term commuter parking in the core to short-term parking to accommodate required short-term auto trips. Require publically-owned and future privately owned parking in the C-3 districts to employ a parking rate formula which encourages short-term and discourages long-term parking.

c. Improve facilities for off-street goods delivery in new development so as not to aggravate on-street conflicts between delivery vehicles and other traffic and pedestrian movements. See Appendix D, Part 2, p. D-7.

d. Implement a system of transit preferential streets where exclusive or semi-exclusive transit lanes are provided to facilitate the movement of public transit within the downtown. (The Downtown Transportation Plan in the Transportation Element of the Master Plan identifies a network of transit preferential streets. See Appendix H, Part 4, p. H-14.)

e. Implement new Master Plan policies regarding downtown pedestrian circulation. (Appendix H Part 4 contains the text of the policies.) The policies call for:

1. Implementing a pedestrian street plan whereby certain streets or alleys would be enhanced for greater or even exclusive pedestrian use.

2. Providing sufficient pedestrian standing and movement space by regulating the location of sidewalk structures.

3. Requiring new development to accommodate midblock pedestrian ways and arcades pursuant to a pedestrian network plan.

4. Controlling vehicular access to new development from pedestrian and transit oriented streets. (Appendix D, Part 2 contains proposed Planning Code text controlling such access.)

f. Carry out other policies in the Downtown Transportation Plan section of the Transportation Element of the Master Plan. (See Appendix H, Part 4, p. H-14).

g. Implement other circulation improvements and transportation systems management techniques as called for in the Center City Circulation Program Final Report.

E. HOUSING

Concern: Continued office development and creation of new jobs can result in an imbalance in the supply of housing, relative to demand, result in the escalation of housing costs and rents, and shrink the supply of available housing.

Approach:

(1) Require Developers of New Office Buildings to also Provide Housing

New housing should be built to mitigate the impact of the office development on the housing supply. Both the City and the office development community should share the responsibility to provide housing. The City's obligation should be to assure that there is sufficient land made available for housing through zoning and use of surplus City owned properties, and that the processing of housing projects is expedited. The development community should be obligated to employ its entreprenural skills to create the housing.

Specifically development of new housing (or rehabilitation of long vacant existing housing) should be required in proportion to the amount of commercial office space as a condition of approval of all projects containing more than 50,000 square feet of office space. The requirement would be 640 sq. ft. of housing for every 1,000 sq. ft. of office space based on the following assumptions:

1) the average gross square footage of office space per employee is 250 sq. ft.;
2) 40% of the employees will live in San Francisco;
3) the average gross square footage of residential space per person is 400 sq. ft.

To prevent the housing requirement from being satisfied with fewer very large units, an appropriate unit requirement should also be imposed. Based on an occupancy rate of 1.8 persons per unit the unit requirement would be approximately .9 units per 1,000 sq.ft. of office space. The housing could be provided as part of the office building or on another site somewhere in the city. (A separate ordinance implementing this policy is being prepared.)

The housing would be subject to whatever low and moderate income requirements apply citywide. The proposed revision of the Residence Element contains the following policy:

"Policy 3 Where Feasible, Require Inclusion of Low and Moderate Income Units in New Housing Development.

"Inclusion of low and moderate income units in new housing developments of appropriate size would be desirable, if feasible. A portion of the units in a housing development should be required to be set aside for low and moderate income units, if public subsidies are available. If subsidies are not available and the situation allows additional density to be granted (such as by permitting greater height within established height limits, or approving a reclassification or a planned unit development to achieve greater density), it may be appropriate to require that a portion of the additional units be low and/or moderate income. The number of such units should vary according to the number of additional units allowed and the specific characteristics of the project. In no case should the requirement be so great as to jeopardize overall project feasibility."

(2) Allow Downtown Buildings to be Larger if They Include Housing

In order to create an incentive for development of residential projects and/or mixed office/residential

projects in the downtown, additional FAR should be allowed for residential uses incorporated in the project. The additional FAR would be 5 in the C-3-0 district, 3 in the C-3-R district, 4 in the C-3-G district, and 2 in the C-3-S district. (See FAR Table, p. 4.)

(3) Assure that There is Enough Land for Housing

a. Make available for housing development City-owned property which is no longer needed by the City or which could be developed with housing consistent with its continued public use (for example, development of housing above a public garage). Accelerate marketing of property in redevelopment areas.

b. Rezone certain areas adjacent to downtown to encourage development of new housing. These areas, shown on Map 5 on the following page, are as follows:

Central-South-of-Market

This area should be rezoned as a special mixed use district permitting industrial and residential/ commercial uses The criteria should encourage retention of existing housing and development of new mixed commercial-residential projects at R-C-3 density on "underutilized" parcels (i.e., parcels which are not intensively developed, such as parcels containing parking lots, open lot storage and older single story buildings) where job and industry displacement would be minimized. The criteria should discourage such development on more intensively developed parcels where problems of displacement would be more intense.

Rincon Hill

This area should be rezoned as a high density predominantly residential area to take advantage of its proximity to downtown and sweeping views. It has a number of publicly owned parcels, many of them in marginal uses or soon to be discontinued uses. R-C-4 zoning, allowing a density of approximately 210 units per acre, would be appropriate. Attenuating the noise from the freeways and bridge will require special design features.

South Park

The existing housing in this former residential area is already protected by residential zoning. The entire area should be encouraged to revert to residential use by rezoning it R-C-3 for medium density housing.

South Van Ness

This area is well served by transit and is close to Civic Center. It already contains some housing and has a number of underdeveloped parcels. It should be rezoned as a moderately high density, predominantly residential area. R-C-3 zoning, allowing a density of approximately 105 units per acre, would be appropriate.

Van Ness

Van Ness Avenue has the potential of becoming a truly grand boulevard with mixed use predominantly residential projects, interspersed among the landmark quality auto establishments which should be retained. With careful height and set back controls a density somewhere between R-C-3 and R-C-4 might be appropriate. Because of the need for neighborhood serving retail and office space outside downtown, and the scale and accessibility of downtown, consideration should be given to zoning controls which would permit three to four stories of commercial use with residential uses above.

Mission Bay

Southern Pacific is preparing a Master Plan for its properties in this area. A mixed-use project with substantial amounts of housing is envisioned.

All these areas are or will be the subject of special studies and the recommendations for specific controls will be presented at the conclusion of those studies.

In addition, the South Beach, Rincon Point, and Yerba Buena Center redevelopment projects will add substantial amounts of housing adjacent to downtown. The identified portions of these redevelopment areas are already designated for housing in the official redevelopment plans.

c. Many of the areas proposed for rezoning to encourage housing contain a number of viable commercial or industrial structures and businesses. The new zoning should provide that newly created non-conforming uses would be permitted to remain without termination date, and that alterations to structures would be permitted if necessary for business purposes, if the activity is compatible with residential uses. (See Appendix E, Part 2, p. E-2.)

(4) Protect Residential Uses Adjacent to the Downtown from Encroachment of Commercial Uses

The South of Market, Tenderloin and Chinatown are mixed use areas containing substantial amounts of lower cost housing,

some of it in residential hotels and some in apartments, which is subject to increasing pressure for conversion to commercial uses as the downtown expands. Parts of the South of Market housing is zoned C-3-S. The Tenderloin is for the most part zoned C-3-G and Chinatown is zoned C-3-G and C-2. Under those zoning designations the residential uses may be converted to commercial uses without special review. The units in residential hotels are currently protected by the Residential Hotel Demolition and Conversion ordinance. However, demolition and conversion of apartment units are not regulated. Protection of both residential hotels and apartment units should be provided either by some form of R/C zoning, a demolition and conversion control ordinance, or both. The C-3-G boundary adjacent to the Tenderloin is proposed to be revised to more sharply delineate the edge of commercial downtown and the predominantly residential part of the Tenderloin. The proposed new boundary is shown on Map 4.

(5) Make Changes in Open Space Requirements, FAR Calculations, and Rear Yard Requirements to Encourage Housing

Three relatively minor changes in the Planning Code would facilitate development of housing. First, the open space requirements for housing in high density areas should be amended to allow solariums to qualify as usable open space. Second, the Planning Code should be modified to exclude from the calculation of FAR for a mixed residential/non-residential use structure, the space on a non-residential floor which is devoted to the elevator core for upper floor residential uses. Third, the Planning Code should be modified to enable the City Planning Commission to modify the rear yard requirements for housing in the C-3 districts provided the design of the project will assure adequate access to light and air. (See Appendix E, Part 2, p. E-2.)

F. PRESERVATION OF SIGNIFICANT BUILDINGS

Concern: That new construction and development in the downtown area not result in both the actual and contextual destruction of landmark and historic and architecturally significant buildings.

Approach:

(1) Reduce the Economic Incentive to Replace Significant Buildings by Allowing Transfer of the Site's Unused Development Potential

In many situations a substantially larger building could be built on the site of a landmark or other significant building. In order to reduce the incentive to replace the significant building, "unused" development rights should be allowed to be transferred to another site within the same zoning district. The transfer could be made to any other

site with the C-3 districts unless development of the site would result in the destruction or defacement of another significant building. The transfer should be allowed as a matter of right for designated landmark buildings and structures on the list of "Architecturally and/or Historically Significant Buildings" endorsed by the City Planning Commission on May 29, 1980 (See Appendix F, Part 1, p. F-1). Upon recommendation by the Landmarks Board and approval by the City Planning Commission, other appropriate buildings that are similar in architectural richness or historic significance as those buildings already identified as "significant" may be made eligible. Likely candidates for addition to the list are the buildings rated A and B by Heritage in its expanded survey. See Appendix F, p. F-9.

The amount of unused development rights which could be transferred would be the difference between the maximum base gross floor area of a new building which could be placed on the site of the preserved building (exclusive of the various FAR allowances), and the actual gross floor area of the preserved building. Unused rights could be saved for future transfer. The transfer would be conditional on the owner undertaking a program to restore its facade and/or, to seismically reinforce the building to State Historic Building Code, if needed.

The proposed Planning Code text appears in Appendix F, Part 2, p. F-14.

Provide an additional development allowance to encourage retention and restoration of significant buildings

To facilitate and encourage the retention and restoration of significant downtown buildings, the City Planning Commission could exclude from FAR calculations, if the significant building is part of the development site, or approve transfer to the development site, if the significant building is on another site, an amount of floor area which the Planning Commission deems necessary to facilitate retention of the building, the renovation of the facade and significant public interiors and the seismic reinforcement of the building pursuant to the provisions of the State Historic Building Code. The amount of floor area to be excluded or transferred could be up to the full gross floor area of the space devoted to public use and up to 50% of the space devoted to private use.

The proposed Planning Code text appears in Appendix F: Part 2, p. F-14.

(3) Carefully Control New Development in Areas with Concentrations of Significant Buildings

The older part of downtown, which contains a concentration of architecturally and/or historically significant buildings, deserves special protection to avoid unnecessary loss of those significant buildings and to assure that new development is compatible with the general character of the area created by the older significant buildings. Parts of this area -- essentially the retail district and along Market Street -- also require special controls to assure that new development does not substantially reduce sunlight penetration at the sidewalk and plaza level. This area should be designated as a conservation district with special requirements including requiring conditional use review of new development in certain situations. The boundaries are shown on Map 5 and the requirements and conditional use criteria are set forth in Appendix F, Part 3, p. F-11).

(4) Redirect growth to other downtown locations

The number of development sites in the existing C-3-0 district which do not contain architecturally significant buildings is quite limited. New development in this area increasingly threatens the loss of these buildings. At the same time, new office development is occurring south of the C-3-0 district and in the Market--Van Ness area at less than proposed C-3-0 densities. (These areas are zoned C-3-G and C-3-S respectively.) There are relatively fewer architecturally significant buildings in these areas. In order to redirect growth to these areas, it is proposed that these areas (excluding sites with significant buildings) be permitted to be developed at higher densities with an equivalent reduction in development potential in the existing C-3-0 district. The maximum allowable FARs without additional allowances are proposed to be 6 in the C-3-S district, 8 in the C-3-G district, and 12 in the C-3-0 district. (See FAR table, page 3.)

Growth would be redirected in the following way. The two areas would be designated special development districts in the Planning Code. That portion of the expanded C-3-0 which is currently zoned C-3-G (the Market - Van Ness area) would be allowed to go from 8 to 12 FAR, and that portion currently zoned C-3-S (the Howard-Folsom east of Third area) would be allowed to go from 6 to 12 FAR by transferring development rights from an eligible site in the existing C-3-0 district. (The two areas are shown on Map 5 and the eligible sites are mapped and listed in Appendix F, Part 1, p. F-1.) Thus growth would be permitted in the new areas at increased densities only with commensurate reduction in growth potential in the existing C-3-0 district. (See Appendix F, Part 5, p. F-19 for the proposed Planning Code text.)



ARCHITECTURALLY AND/OR HISTORICALLY SIGNIFICANT BUILDINGS, DESIGNATED LANDMARKS AND DOWNTOWN CONSERVATION DISTRICTS.

MAP 5

G. INDUSTRY

Concern: That downtown office growth and new housing not result in substantial displacement of industry.

Approach: Protect industrial areas from disruptive effects of office and housing development.

(1) It is proposed that the planning code be revised to make primary office and residential uses, conditional uses in the C-M and M-1 and M-2 districts. The City Planning Commission would be required to find prior to approving the conditional use, that:

1. the site is not likely to be marketable for industrial use in the foreseeable future;

2. the office or residential use will not be incompatible with industrial uses on adjacent properties; and

3. if the proposed use is office use within the area bounded by Channel Street, Eighth Street, the Embarcadero and the northerly edge of the M-1 district generally along Folsom Street, the character of the office use will be of a service nature to the downtown.

(See Appendix G, Part 1, p. G-1 for the Proposed Planning Code text.)

APPENDIX C: LAND USE INVENTORY

INTRODUCTION

A land use inventory of the C-3 District was undertaken as part of this study to provide the base case from which the land use impacts of the Alternatives could be analyzed. This approach was preferred to compiling land use information from existing sources which had been prepared for different purposes, at different times, and to different levels of detail. This appendix documents the Land Use Inventory procedures. The completed inventory is available for public review at the Department of City Planning, 450 McAllister Street, Room 400.

PROCEDURES

The first step was to design a field instrument (inventory form) that could be used to record the use conditions on each lot of each block in the C-3 District. The form was designed to correspond to the Sub-Area Profile Reports used by the Department of City Planning, and to include additional information necessary for analysis of the C-3 District.

Nineteen land use categories were defined to cover the principal uses expected in the C-3 District. The list below includes brief definitions of the uses covered in each category:

- Office - all general office space including data processing facilities. Includes conversions from other uses, such as industrial, only when office occupant obvious to field researcher.
- Branch Bank - customer banking facilities separately identified from rest of space in building.
- Retail - major department stores and ground floor retail, other establishments serving walk-in customers, as well as service stations, auto repair shops and garages.
- Restaurant/Bar - coffee shops, delicatessens, and fast-food establishments, in addition to full-service restaurants and bars.

- Other - vacant lots and vacant space including parts of buildings (e.g. upper floors), private clubs and associations, PG&E substations, warehouses, Moscone Center, bus terminals and miscellaneous uses not classified elsewhere.

- Hotel, Transient - commercial, short-term hotel accommodations.

- Hotel, Residential - facilities with rooms to let for the day, week and month.

- Residential - apartment buildings and other housing units.

- Parking - parking facilities available to the public, for which a fee is charged, and private parking facilities.

- Industrial - space for wholesale, light manufacturing and heavy manufacturing activities, e.g. wholesale goods storage, food and liquor distributors, printers, machine shops, garment and electronics manufacturing.

- Government - government-owned office space, courtrooms, and government social services facilities.

- Educational - public and private schools.

- Institutional - museums, churches, libraries, firehouses, and police stations.

- Theater - stage and film theaters.

- Non-Profit Community Purpose - private social service facilities.

The Land Use Inventory field work was conducted in late 1981 and early 1982. Field researches listed building address, type(s) of use(s), numbers of floors and estimated lot coverages. They also estimated the number of units for residential uses. City block and lot numbers and lot areas (gross sq. ft.) were recorded on the inventory forms from Real-Dex Atlas parcel maps./1/

Sanborn Maps/2/ were used to obtain the percentage of building coverage on the lot in instances where it could not be accurately determined from field observations, and to confirm field observations. Lot coverages were revised in instances where field observations varied significantly from data in the Sanborn Maps. These maps were also used to obtain the building heights of most of the buildings identified in the Inventory.

Upon completion of the Land Use Inventory field work, the gross square footage was calculated for each building. The calculation was based on the total lot area multiplied by the number of floors, adjusted for any setbacks at upper floors. In instances where buildings did not completely cover their lots, the gross square footage estimates were multiplied again by the percentage of building coverage on the lot. The field observations of the mix of uses in a building (number of floors by use) were the basis for calculations of gross sq. ft. by use.

The Polk Directory/3/ was used to provide correct addresses in instances where addresses were not available from field observations. In addition, the Directory helped to determine the number of housing units in residential buildings.

Several existing data sources were consulted to spot-check the Inventory and confirm that the gross square footage estimates compiled from the field work were compatible with other sources of land use information. Inventory estimates for office and retail uses were compared with data compiled by the Department of City Planning for new office development, the Real-Dex Atlas, the Building Owners and Managers Association (BOMA) and with real estate data collected by Coldwell Banker, a private real estate firm. These spot-checks confirmed that every major project built since 1945 was included and that estimates were reasonable.

Upon completion of the Land Use Inventory forms, the data base was entered into a computer system. To ensure that Inventory data had been translated correctly from the field instrument, entries were reviewed and validated again for consistency of lot size, number of floors and building size. It was determined that the accuracy of the computerized Inventory was adequate for the purposes of this study./4/

USE OF THE INVENTORY

The Inventory's nineteen land use categories were grouped according to the most useful analytical distinctions. For example, Table IV.B.1 (page IV.B.2) shows the distribution of space in the C-3 District by use and subarea, for 1981. This table presents the results of the Land Use Inventory, in the form in which they are most commonly used this report. There are eight land use categories. The correspondence between these analytic categories and the Inventory categories is shown below:

Analysis Category	Inventory Category
Office	Office, branch bank, government
Retail	Retail (excluding auto repair shops and garages), restaurants and bars
Transient hotel	Transient hotel
Residential hotel	Residential hotel
Housing	Residential
Cultural/Institutional/ Educational/Other	Educational, institutional, theater, other
Industrial/Warehouse/ Automotive	Industrial (including auto repair shops and garages)
Parking	Public and private parking

This version of the Land Use Inventory (reflecting late 1981 and early 1982 land use conditions in the C-3 District) was used as the sampling list for the Downtown EIR Employer and Employee Surveys. Appendix F describes the sampling methodology and procedures. The Inventory was also used in the Employment Analysis to estimate current C-3 District employment. Appendix H describes the methodology for the employment estimates.

The Inventory estimates of lot size and building size, by location, were used in the development feasibility component of the real estate analysis. Appendix G, Land Use and Real Estate Development Analysis, describes the methodology and procedures of this analysis.

The Inventory document available for public review incorporates the late 1981/early 1982 base (as shown in Table IV.B.1) and projects under construction in the C-3 District. The list of projects under construction, indicating gross sq. ft. by use, was supplied by the Department of City Planning. These projects were entered on the appropriate blocks and lots in place of the Inventory estimates of gross sq. ft. for existing uses on the site. The 1984 C-3 District setting reflects these conditions, plus the conversion and upgrading of existing space.

NOTES - Land Use Inventory

/1/ The Real-Dex Atlas is published by Real Estate Data, Inc. (REDI) and provides land use information on a lot by lot basis. The Atlas includes: 1) parcel maps which are dimensioned and identify block numbers, lot numbers, zoning classifications, addresses and street names; 2) volumes which list type of use, name of business establishment, name of property owner, lot numbers, building addresses, gross square footage, etc. The Atlas is revised annually.

/2/ Sanborn Maps identify building coverage on the lot, building height and number of stories, and land use.

/3/ R.L. Polk and Co., 1981 San Francisco City Directory, Dallas, Texas. The Polk Directory lists addresses, names of commercial establishments, names of residents and property owners. The Directory is organized alphabetically by last name and by street address.

/4/ The data in the Land Use Inventory are estimates and cannot necessarily be relied upon for site-specific information. They are used in the study to provide aggregated information on C-3 District and subarea land use patterns.

APPENDIX D: CONSTRUCTION FEASIBILITY ANALYSIS

This analysis discusses project size, building envelope and construction cost for prototypical building sites in the C-3 District under each of the five Alternatives. This information is used in the land use and real estate development analyses (see Appendix G) to help determine the most probable overall development profile of each Alternative. These prototypes are also considered in the analyses of the Skyline Image (see Appendix N); Streetscape, and Pedestrian Amenities (see Appendix M); and Wind, Sun and Shadow (see Appendix M).

Because of the large array of zoning and height districts embodied in the five Alternatives (see Table D.1), districts with similar characteristics are combined into one analytic prototype. A Prototype Building Summary of all prototypes analysed (68 total) is available for public review in the form of computer printouts at the San Francisco Department of City Planning, 450 McAllister Street, Room 400.

For each prototype the Summary includes:

- The average Final Floor Area Ratio (FAR)/1/ of the Zoning District,
- The Code Gross/2/ and Actual Gross Square Foot/3/ Project Area,
- The Net Rentable Area,/4/
- Construction Cost per Square Foot,
- Total Construction Cost of the Project,
- Number of Housing and Hotel Units (if any), and
- Average Size of Housing (or Hotel) units (if any).

The above information is provided for each of the following uses:

- Offices (with Retail),
- Offices and Residential,
- Residential,
- Hotels, and
- Retail (Partial).

TABLE D.1: C-3 USE DISTRICTS AND HEIGHT DISTRICTS ANALYSED IN CONSTRUCTION FEASIBILITY ANALYSIS BY ALTERNATIVE (a)

	Alternative				
	1	2	3	4	5
Number of Prototypes Analyzed	13	14	5	15	21
Zoning Districts	C-3-O C-3-R C-3-G C-3-S	C-3-O C-3-R C-3-G C-3-S	C-3-O C-3-R C-3-G C-3-S	C-3-O C-3-R C-3-G C-3-S C-2 RC-3m RC-4m C-3-0m C-3-Gm S(1) S(2)	C-3-O C-3-R C-3-G C-3-S RC
Height Districts Analyzed	700 600				700
		575		575	
					550
	500	500		500	
	450	450			450
	400	400		400	400
	360	360			350
	340	340			
	320	320		320	320
	300	300		300	300
			260		
	240	240	240	240	
	225	225		225	
					220
		200			200
					180
	160	160		160	
	150	150	150	150	150
	140	140	140		
				135	135
	130	130	130	130	130
				120	120
				100	100

TABLE D.1: C-3 USE DISTRICTS AND HEIGHT DISTRICTS ANALYSED IN CONSTRUCTION FEASIBILITY ANALYSIS BY ALTERNATIVE (continued)

	Alternative				
	1	2	3	4	5
Height Districts Analyzed (Continued)					96
					90
	88	88	88		
	84	84	84	84	84
	80	80	80	80	80
	70	70	70	70	70
				65	65
					60
					50
				40	

(a) Computer printouts of prototype analyses and related materials are available for public review at the Department of City Planning, 450 McAllister Street, Room 400.
(b) See Table II.1 for key to use district symbols.

SOURCE: Roger Owen Boyer & Associates

A summary of this information for offices in the highest height districts is shown on Table D.2.

Graphic examples of the method used to analyze each Alternative are shown in Figures D.1 through D.5. These examples show typical building configurations for an office building in the maximum height districts in the C-3-O use district, designed by using the bonuses and requirements outlined in each Alternative. The page following each figure shows the calculations that determine the height and form of each prototype building illustrated in each figure. The second page following each figure shows the corresponding page from the computerized Prototype Building Summary for that Alternative, use district and height district.

TABLE D.2: PROTOTYPICAL FLOOR AREA RATIOS (a) FOR OFFICE CONSTRUCTION IN THE C-3 DISTRICT, BY ALTERNATIVE

Alternative	Floor Area Ratios (FARs) By Use District (b)						
	C-3-0	C-3-R	C-3-G	C-3-S	C-2	C-3-0m	C-3-Gm
1	17.0 to 1	11.0 to 1	10.0 to 1	10.0 to 1			
2	17.0 to 1	11.0 to 1	10.0 to 1	10.0 to 1			
3	12.0 to 1	8.5 to 1	7.0 to 1	6.5 to 1			
4	14.0 to 1	10.0 to 1	10.0 to 1		5.0 to 1	10.0 to 1	3.0 to 1
5	12.65 to 1	6.5 to 1	8.5 to 1	6.3 to 1			

(a) The Final FARs shown are averages for all building sites for the highest height limits in the use district shown. Districts with lower height limits may have lower FARs. Complete computer printouts for all height and use districts analysed are available for public review at the Department of City Planning, 450 McAllister Street, Room 400.

(b) See Table IL1 for key to use district symbols.

Note that each Prototype Building Summary shows construction costs, as well as data related to building size. The costs shown in the summaries are derived from the basic construction costs shown in Table D.3 by adjusting the basic costs for any special characteristics of the Alternative (such as required setbacks of upper floors) that may affect typical construction costs. The basic construction cost data shown in Table D.3 and the adjusted construction cost data shown in the Prototype Building Summaries are derived from historical cost data for construction in downtown San Francisco./5/

The characteristics of the prototypes shown in Figures D.1 through D.5, which take into account only one lot size, may vary slightly from those of the Prototype Building Summaries which are averages that take into account a range of lot sizes, configurations, shapes and locations. These are all conditions that affect the manner in which height, bulk, and FAR limits are applied; and the resultant maximum floor area in a specific new building.

TABLE D.3: CONSTRUCTION COST SUMMARY (1982 Dollars per GSF) (a)

Building Size	Office 95% Retail 5% Includes Tenant Allowable @ $16.00/s.f.	Office 50% Residential 50% 1 parking space per 5 res. units including tenant allow. (b)	Office 61% Residential 39% 1 parking space per 5 res. units including tenant allow. (b)	Residential 95% Retail 5% 1 parking space per 2 1/2 res. units (b)	Convention/ Hotel 95% Retail 5% 1 parking space per 16 rms. FF&E inc.	Elevators
4 story to 65' high	75.28	69.97	71.02	69.31*	102.67	200 FPM Hydraulic
8 story to 130' high	89.48	83.10	84.35	78.31**	121.93	350 FPM Gearless
11 story to 160' high	95.60	88.78	90.11	83.54**	130.26	500 FPM Gearless
16 story to 240' high	96.49	90.36	91.72	85.81***	132.44	500 FPM Gearless
25 story to 320' high	99.65	92.48	93.87	88.14***	135.41	700 FPM Gearless
34 story to 500' high	104.13	96.65	98.10	90.94***	141.50	1200 FPM Gearless
50 story to 700' high	106.63	98.97	100.45	93.13***	144.89	1200 FPM Gearless

*Frame Construction
**Load Bearing Masonry
***Structural Steel

NOTES:

1. The above unit prices are based on historical data for construction of good quality. No escalation or market factors is considered. Assume piling for all commercial structures over 6 stories; assume piling for all residential structures over 11 stories. Note that actual costs may vary from this analysis due to individual characteristics of each site and project.
2. Costs include construction supervision, general conditions, bonds, permits, architects' fees, engineers' fees, testing engineers' fees, soils investigation and development costs.
3. Costs exclude interim financing and land costs. These costs are considered in Land Use and Real Estate Development Forecasts (see Appendix G).
4. Small or narrow buildings with larger than average wall surface to floor area ratio area may cost more per square foot.
5. These costs are based on designs with no unrequired building setbacks, sloped areas or special shapes.

(a) This information is derived from an analysis by Lee Saylor, Inc., Construction Cost Estimators Walnut Creek, dated January 25, 1982. A copy of this analysis is available for public review at the Department of City Planning, 450 McAllister Street, Room 400.
(b) All parking is assumed to be underground.

SOURCE: Roger Owen Boyer & Associates

An analysis of buildings constructed or approved between 1971 and 1980 (while the provisions of Alternative 1 were in effect, before implementation of "interim controls") indicates trends in average FARs which were used to determine the FARs shown in the Summaries for Alternative 1. Since Alternative 1 establishes no explicit maximum FAR, it was assumed that its average final FAR would be similar to the average of the buildings actually built pursuant to its provisions./6/

Note that the FARs of the building prototypes for each Alternative are averages of the ranges of possible FARs that could occur given the variety of site sizes, shapes and locations within the C-3 District. The actual FAR of a particular building built under any Alternative could vary widely from its "prototypical FAR" depending upon the particular characteristics of its site. The average FARs shown in the Prototype Building Summaries (and in Tables D.4 through D.8) are intended to be used only for the purpose of the Land Use and Real Estate Development Analysis in this report.

Consideration of transfers of development rights and bonuses for historic preservation are excluded from the construction prototype analysis described in this appendix, but are accounted for in the Land Use and Real Estate Development analysis, as described in Appendix G.

NOTES - Construction Feasibility Analysis

/1/ Final Floor Area Ratio: total code gross floor area divided by the site area (see Glossary).

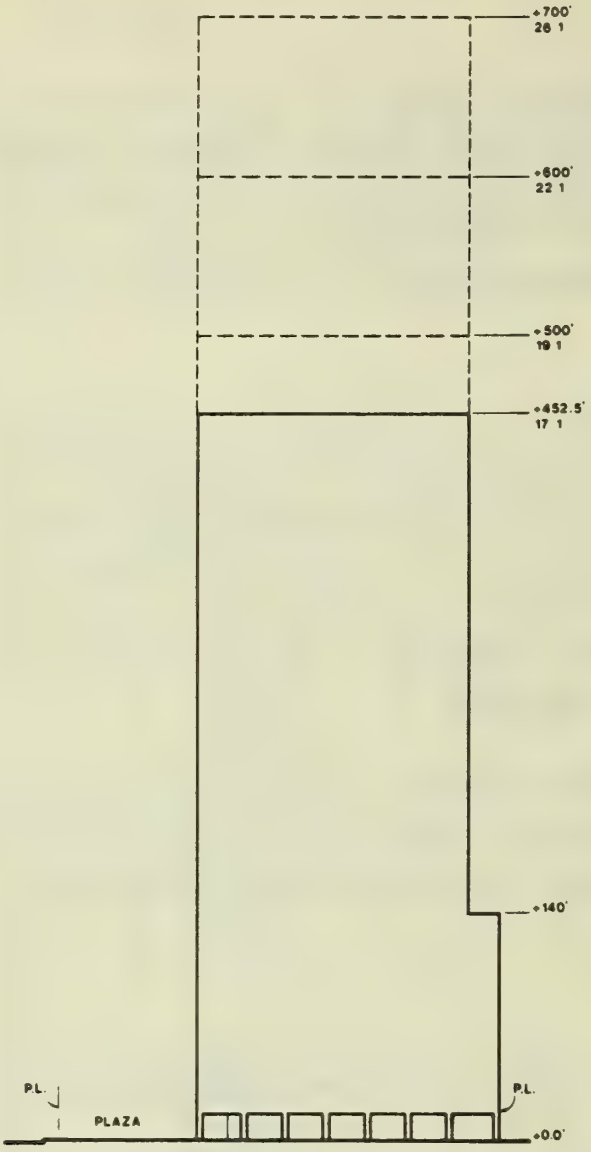
/2/ Code Gross Floor Area: total square foot area of the building as defined under Floor Area, Gross, Section 102.8, San Francisco Planning Code, 1979 Edition, Part II, Chapter II of the San Francisco Municipal Code.

/3/ Actual Gross Square Foot: total square foot area of building, including areas omitted under Code Gross Square Foot. A ratio of 1.12 x Code Gross was determined as typical by averaging several existing buildings in the C-3 District. Parking area is not included in actual gross square footage as used in this analysis.

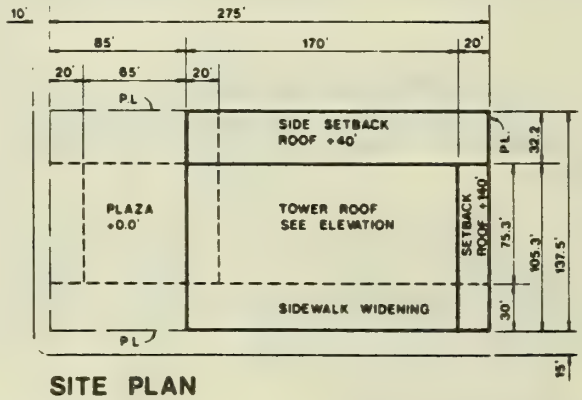
/4/ Net Rentable Area Square Foot: building area leased to tenants. The prevailing standard is to lease the actual gross square footage less the area of the elevator shafts. All other areas are included in the net area, such as outside walls, elevator lobbies, toilets, stairways and duct shafts. Building efficiency is defined as the net rentable area divided by the actual gross area. The building efficiency ratio used herein is 0.90.

/5/ Lee Saylor, Inc., Construction Cost Estimators, January 1982.

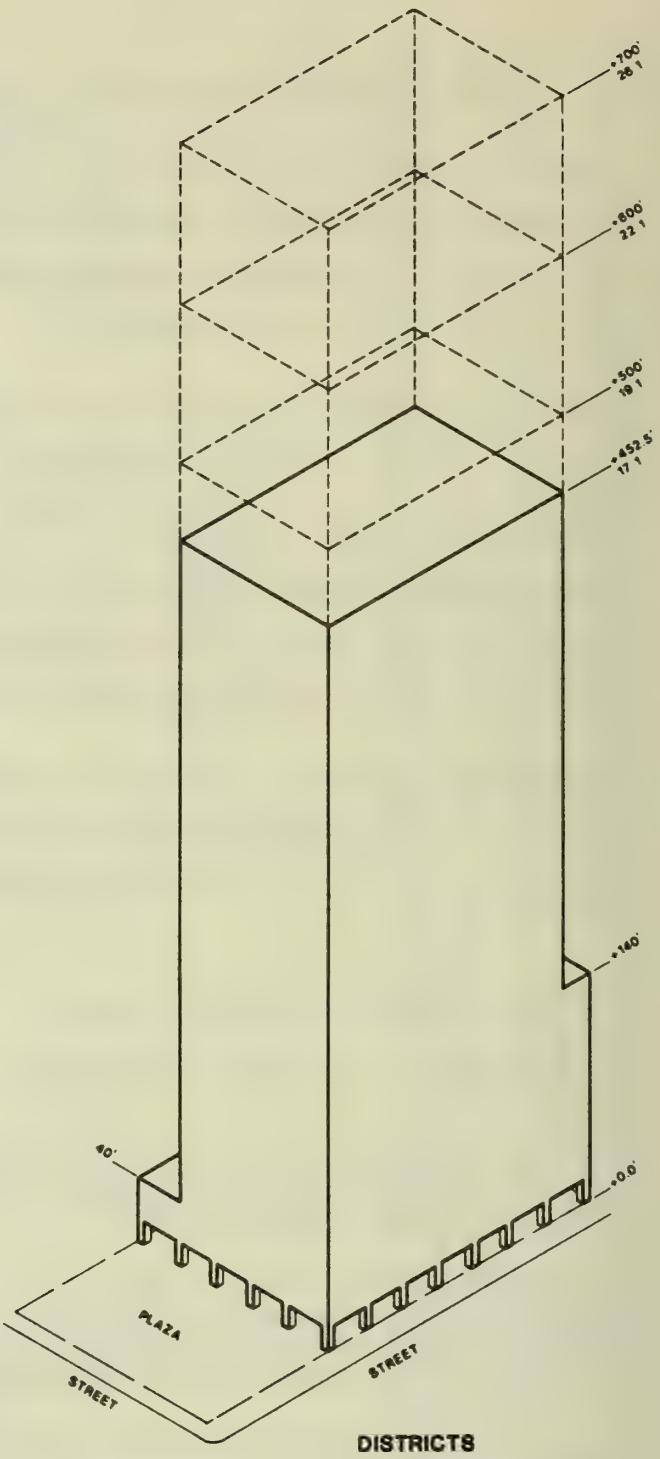
/6/ The historic FAR analysis is available for public review at the Department of City Planning, 450 McAllister Street, Room 400.



ELEVATION



SITE PLAN



ISOMETRIC



DISTRICTS

Zoning District - C-3-O

Height District - 700-I (600-I, 500-I and 450-I similar)

SOURCE: Roger Owen Boyer and Associates

FIGURE D.1:
Alternative 1 Building Prototype

TABLE D.4: BUILDING PROTOTYPE FOR ALTERNATIVE 1

Zoning District: C-3-O

Height and Bulk District(s): 700-I (600-I, 500-I & 450-I Similar)

Site Area: **137.5 Ft. X 275 Ft. = 37,812.5 Sq. Ft.

Basic Floor Area Ratio Limits (FAR): 14.0 to 1 (No Maximum)

Basic Allowable Gross* Floor Area (Sq. Ft.): 37,812.5 X 14.0 = 529,375

Bonuses:

Building Feature:	Calculations: (see site plan)	Maximum: %	Minimum: Sq. Ft.	Maximum: Sq. Ft.
1. RAPID TRANSIT ACCESS	529,375 X 20% =	20	-0-	105,875
or, if larger:				
2. RAPID TRANSIT PROXIMITY	MAX. = (750-0) 50 =	10	-0-	
3. PARKING ACCESS	MAX. = 529,375 X 20%	5	-0-	26,469
4. MULTIPLE BUILDING ENTRANCES	(3 ENTRANCES -1) 10,000 =	5	20,000	26,469
5. SIDEWALK WIDENING	(30' X 275') - 250 ± = 8,000 (20' X 105.3') = 2,106 10,106 x 7 =	15	70,770	70,770 (15% Not Possible)
6. SHORTENED WALKING DISTANCE	(225' + 225' + 137.5') - 137.5 = 450' X 40' =	10	18,000	24,000 ± (10% Not Possible)
7. PLAZA	65 X 75.3 X 10 =	15	49,075	49,075 (10% Not Possible)
8. SIDE SETBACK	32.2 X 275 X 6	15	53,130	53,130
or, if larger:				
9. LOW COVERAGE AT UPPER FLOORS	NOT USED	15		(15% Not Possible)
10. OBSERVATION DECK		NA	10,000	10,000
TOTAL BONUSES ASSUMED FOR THIS SITE	=		220,845	365,788 (Max.)
BASIC ALLOWABLE AREA	=		529,375	529,375
TOTAL CODE GROSS AREA	=		750,220	895,163
FINAL BUILDING FAR	=		19.8:1	23.7:1

* Gross floor area is defined in the San Francisco City Planning Code, Section 102.8, page 9. For the purposes of this analysis the area defined by the code shall be referred to as "Code Gross" and "Actual Gross" shall refer to the gross area of all parts, including those omitted by the Code.

** These lot dimensions were selected because they permit analysis of the bulk guidelines and are typical dimensions occuring in the C-3-O District.

TABLE D.4: BUILDING PROTOTYPE FOR ALTERNATIVE 1 (Continued)

Calculate number of floor levels:

(1) Floor Level	(2) Size (Ft.)	(3) Area Sq. Ft.	(4) No. Flrs.	(5) Tot. Flr. Area	(6) Accumulative Flr. Area** Code Gross	FAR	(7) Height per flr.	(8) Elevation + roof	(9) Elevation + mech.
1st	170' X 107.5	18,275	1	18,275			15.0'	+ 15.0'	
2nd-3rd	190' X 137.5	26,125	2	52,250			12.5' ea.	+ 40.0'	
4th-11th	190' X 105.3	20,007	8	160,056			"	+ 140.0'	***
12th-18th	170' X 105.3*	17,901	7	125,307			"	227.5	***
19th-23rd	" "	"	5	89,505			"	+ 290.0'	***
24th-30th	" "	"	7	125,307			"	+ 377.5	***
31st-38th	" "	"	8	143,208	713,908	19:1	"	+ 477.5	+ 500'
39th-45th	" "	"	7	125,307	839,215	22:1	"	+ 565.0	+ 600'
46th-53rd	" "	"	8	143,208	982,423	26:1	"	+ 665.0	+ 700'

* Assume that a rectangular building is preferred over an eight-sided building. Therefore if one plan dimension is the maximum length allowed, 170 feet, the other dimension is 105.3 feet as dictated by the maximum diagonal allowed of 200 feet.

** The Floor Area Ratio (FAR) determines the maximum code gross area as shown in this column for all of the height districts shown in Column (9). The height limit does not control the FAR.

*** These building heights would have larger code gross areas than shown in Column (6), because the areas in Column (6) are less than the basic allowable area of 529,375 sq. ft. These buildings would be constructed using fewer of the bonus features. Each building height should be developed as a separate prototype.

SOURCE: Roger Owen Boyer & Associates

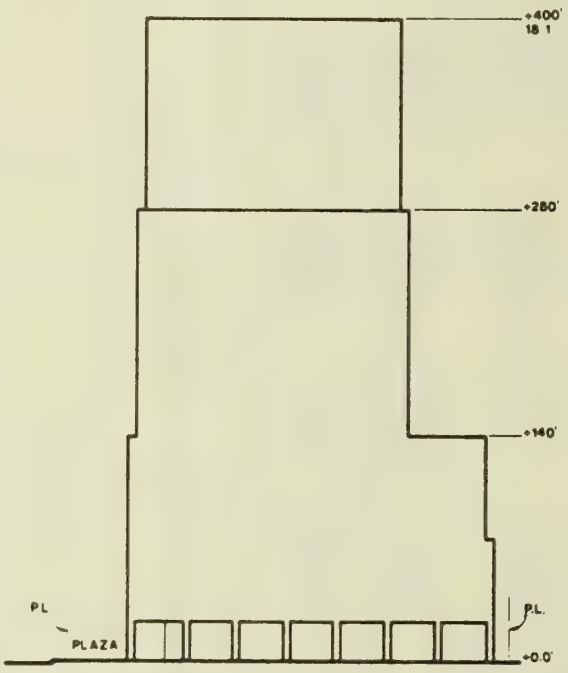
ZONING DISTRICT: C-3-O HEIGHT DISTRICT: 700-I (600-I, 500-I & 450-I SIMILAR) NUMBER OF STORIES: 42 +/-

LOT AREA (SF): 1 SQ.FT.
37812.5 SQ.FT.

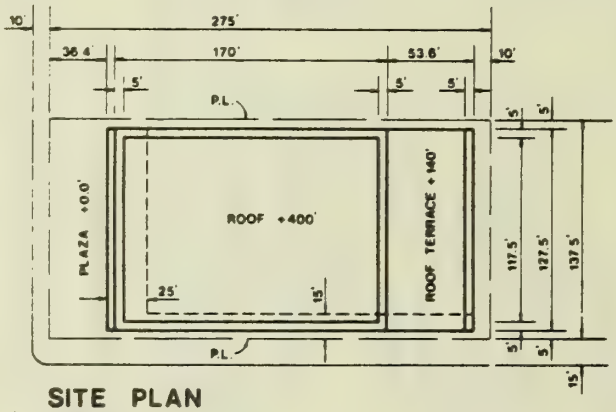
USE	(1) FINAL F.A.R. (F.A.R.):1 <A>	(2) TOTAL CODE GROSS (SF) SITE AREA X F.A.R.	(3) TOTAL ACTUAL GROSS (SF) (2) X 1.12	(4) EFFICIENCY % / 100 RENTED AREA	(5) NET AREA (SF) (3) X (4)	(6) CONSTRUCTION COST($/SF) TOTAL DEVELOP <B> COST	(7) TOTAL CONS. COST ($) (3) X (6)	(8) NUMBER OF UNITS	AVERAGE UNIT SIZE
OFFICE	19.00	19.00	21.28	0.90	19.15	107.49	2287.39	-	-
OFFICE	19.00	718437.50	804650.00	0.90	724185.00	107.49	86491828.50	-	-
USES LISTED BELOW ARE NOT PRIMARY USE FOR C-3-O:									
OFF/RESIDENTIAL	19.00	19.00	21.28	0.90	19.15	99.77	2123.11	.009576	@1000 NET
OFF/RESIDENTIAL (50% RESIDENTIAL)	19.00	718437.50	804650.00	0.90	724185.00	99.77	80279930.50	362	@1000 NET
RESIDENTIAL	19.00	19.00	21.28	0.90	19.15	93.89	1997.98	.019152	@1000 NET
RESIDENTIAL	19.00	718437.50	804650.00	0.90	724185.00	93.89	75548588.50	724	@1000 NET
HOTEL	19.00	19.00	21.28	0.90	19.15	146.06	3108.16	.031340206185	@670 GROSS
HOTEL	19.00	718437.50	804650.00	0.90	724185.00	146.06	117527179.00	1201	@670 GROSS

<A> NOTE: THE AVERAGE FINAL F.A.R. FOR THE ENTIRE DISTRICT WOULD PROBABLY BE LOWER DUE TO DIFFERENT LOT SIZES AND OTHER CONDITIONS.

<B> INCLUDES COST INCREASE OF 2% FOR BUILDING SETBACKS.



ELEVATION



SITE PLAN

ISOMETRIC

0 20 50 100 FEET

DISTRICTS

Zoning District - C-3-0

Height District - 575-I (500-I, 450-I and 400-I similar)

SOURCE: Roger Owen Boyer and Associates

FIGURE D.2:
Alternative 2 Building Prototype

TABLE D.5: BUILDING PROTOTYPE FOR ALTERNATIVE 2

Zoning District: C-3-O

Height and Bulk District(s): 575-I (500-I, 450-I &400-I Similar)

Site Area: **137.5 Ft. X 275 Ft. = 37,812.5 Sq. Ft.

Basic Floor Area Ratio Limits (FAR): 12.0 to 1; Max. = 18.0 to 1

Basic Allowable Gross* Floor Area (Sq. Ft.): 37,812.5 X 12.0 = 453,750

Bonuses:

Building Feature:	Calculations: (see site plan)		Maximum: %	Probable: Sq. Ft.	Maximum: Sq. Ft.
A. LOW COVERAGE AT UPPER FLOORS			NA	100,000	100,000
B. PLAZAS	50,000 / 10 = 5,000 S.F. Max.		100% TOT.	50,000	100,000
ORIENTATION	0%		20%		
WIND	20%		20%		
LANDSCAPING	10%		20%		
PEDESTRIAN ACTIVITIES	10%	50% of Max.	20%		
PUBLIC SEATING	10%		20%		
C. LANDMARK PRESERVATION	Not Used			0	100,000
D. TRANSIT PROXIMITY	750 - 710) 50 =			2,000	25,000
E. SHORTENED WALKING DISTANCE	450 X 40 = 18,000 200 X 40 = 8,000			25,000	25,000
F. HOUSING PROVISION	Provide 25,000 sq. ft. of Housing Elsewhere			25,000	100,000
G. ENERGY CONSER.	15% REDUCTION			5,000	25,000
TOTAL BONUSES ASSUMED FOR THIS SITE		=		207,000	475,000 (Max.)
BASIC ALLOWABLE AREA		=		473,750	473,750
TOTAL CODE GROSS AREA		=		680,750	948,750 (Over Max.)
FINAL BUILDING FAR		=		18:1	25.0:1

*Gross floor area is defined in the San Francisco City Planning Code, Section 102.8, page 9. For the purposes of this analysis the area defined by the code shall be referred to as "Code Gross" and "Actual Gross" shall refer to the gross area of all parts, including those omitted by the Code.

** These lot dimensions were selected because they permit analysis of bulk guidelines and are typical lot dimensions occuring in the C-3-O District.

TABLE D.5: BUILDING PROTOTYPE FOR ALTERNATIVE 2 (Continued)

Calculate number of floor levels:

Floor Level	Size (Ft.)	Area Sq. Ft.	No. Flrs.	Tot. Flr. Area	Accumulative Flr. Area** Code Gross	FAR	Height per flr.	Elevation + roof	Elevation + mech.
1st & 2nd	203.6 X 117.5'	23,923	2	47,846			15' & 12.5'	+ 27.5'	
3rd-11th	226 X 127.5 (Avg.)	28,815	9	259,335			12.5'	+ 140.0'	
12th-22nd	170 X 127.5	21,675	11	238,425	545,606	14.4	"	+ 277.5'	+ 300'
23rd-30th	160 X 117.5	18,800	8	150,400	696,006	18.4	"	+ 377.5'	+ 400'
STORIES TOTAL		Mech.	2 / 32						

SOURCE: Roger Owen Boyer & Associates

ZONING DISTRICT: C-3-O HEIGHT DISTRICT: 575 (500, 450 & 400 SIMILAR) NUMBER OF STORIES: 32 +

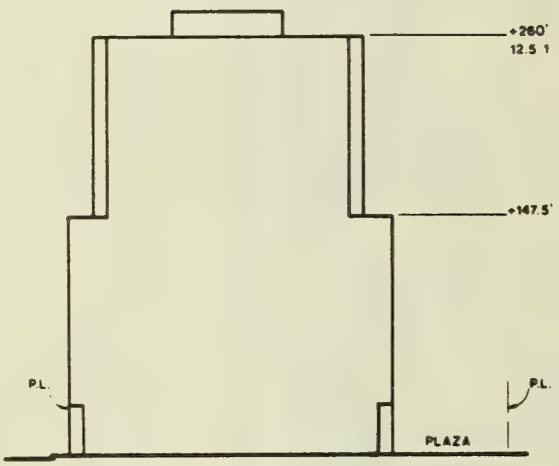
LOT AREA (SF): 1 SQ.FT.
37812.5 SQ.FT.

USE	(1) FINAL F.A.R. (F.A.R.):1 <A>	(2) TOTAL CODE GROSS (SF) SITE AREA X F.A.R.	(3) TOTAL ACTUAL GROSS (SF) (2) X 1.12	(4) EFFICIENCY % / 100 RENTED AREA	(5) NET AREA (SF) (3) X (4)	(6) CONSTRUCTION COST($/SF) TOTAL DEVELOP <B> COST	(7) TOTAL CONS. COST ($) (3) X (6)	(8) NUMBER OF UNITS	AVERAGE UNIT SIZE
OFFICE <C>	18.00	18.00	20.16	0.90	18.14	108.30	2183.33	-	-
OFFICE <C>	18.00	680625.00	762300.00	0.90	686070.00	108.30	82557090.00	-	-
OFF/RESIDENTIAL	18.00	18.00	20.16	0.90	18.14	100.52	2026.48	.009072	@1000 NET
OFF/RESIDENTIAL (50% RESIDENTIAL)	18.00	680625.00	762300.00	0.90	686070.00	100.52	76626396.00	343	@1000 NET
RESIDENTIAL	18.00	18.00	20.16	0.90	18.14	94.58	1906.73	.018144	@1000 NET
RESIDENTIAL	18.00	680625.00	762300.00	0.90	686070.00	94.58	72098334.00	686	@1000 NET
HOTEL	18.00	18.00	20.16	0.90	18.14	147.16	2966.75	.029690721649	@670 GROSS
HOTEL	18.00	680625.00	762300.00	0.90	686070.00	147.16	112180068.00	1138	@670 GROSS

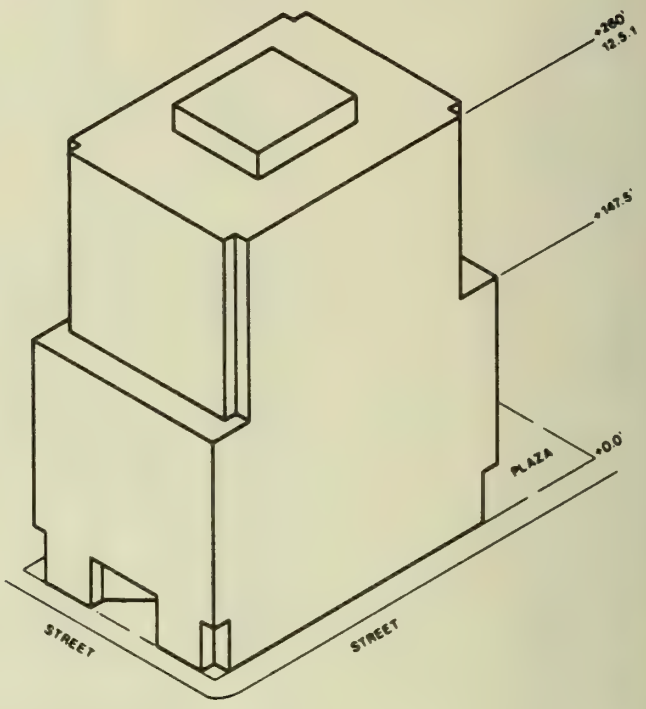
<A> NOTE: THE FINAL F.A.R. FOR THIS SIZE LOT IS THE MAXIMUM ALLOWED (18:1). THE AVERAGE FINAL F.A.R. FOR THE ENTIRE DISTRICT WOULD PROBABLY BE LOWER DUE TO DIFFERENT LOT SIZES AND OTHER CONDITIONS.

<B> INCLUDES COST INCREASE OF 4% FOR BUILDING SETBACKS.

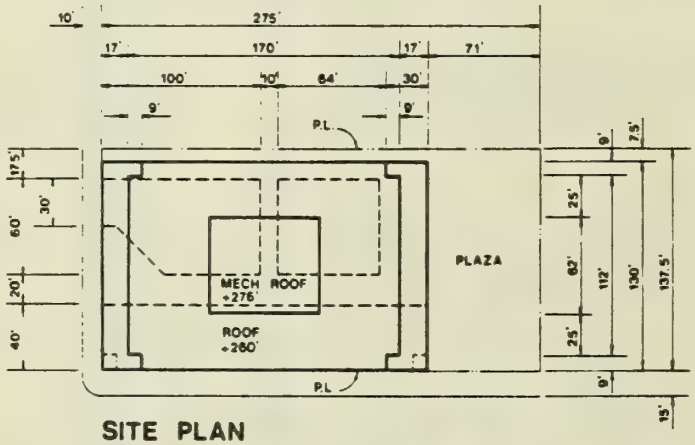
<C> SOME BONUSES REQUIRE HOUSING; WHICH IS LOCATED OFF-SITE IN THIS CASE.
THE OFF-SITE HOUSING COST IS NOT INCLUDED IN THE CONSTRUCTION COST SHOWN ABOVE.



ELEVATION



ISOMETRIC



SITE PLAN

0 20 50 100 FEET

DISTRICTS

Zoning District - C-3-0

Height District - 260-I (240-I and 150-X similar)

SOURCE: Roger Owen Boyer and Associates

FIGURE D.3:
Alternative 3 Building Prototype

TABLE D.6: BUILDING PROTOTYPE FOR ALTERNATIVE 3

Zoning District: C-3-O

Height and Bulk District(s): 260'

Site Area: 137.5' X 275' = 37,812.5 Sq. Ft.**

Basic Floor Area Ratio Limits (FAR): 8.0 to 1 (Max. = 14.0 to 1)

Basic Allowable Gross* Floor Area (Sq. Ft.): 37,812.5 X 8.0 = 302,500

Bonuses:

Building Feature:	Calculations: (see site plan)	Maximum: %	Minimum: Sq. Ft.	Maximum: Sq. Ft.
1. LANDMARK BONUS	Not Used		0	100,000
2. HOUSING BONUS		Not Used		0
3. ADDITIONAL BONUSES:				
A) PUBLIC TRANSIT	Estimate Depends on City Planning Commission		10,000	10,000
B) ENERGY CONSERV-ATION	" " " "		10,000	10,000
C) PEDE-STRIAN MOVEMENT	" " " "		30,000	30,000
D) HOUSING	Provide 100,000 Sq. Ft. of Housing Elsewhere in San Francisco		100,000	100,000
TOTAL BONUSES ASSUMED FOR THIS SITE	=		170,000	250,000
BASIC ALLOWABLE AREA	=		302,500	302,500
TOTAL CODE GROSS AREA	=		472,500	552,500
FINAL BUILDING FAR	=		12.5:1	14.6:1 (Over Max.)

* Gross floor area is defined in the San Francisco City Planning Code, Section 102.8, page 9. For the purposes of this analysis the area defined by the code shall be referred to as "Code Gross" and "Actual Gross" shall refer to the gross area of all parts, including those omitted by the Code.

** These lot dimensions were selected because they permit analysis of bulk guidelines and are typical lot dimensions occuring in the C-3-O District.

TABLE D.6: BUILDING PROTOTYPE FOR ALTERNATIVE 3 (Continued)

Calculate number of floor levels:

Floor Level	Size (Ft.)	Area Sq. Ft.	No. Flrs.	Tot. Flr. Area	Accumulative Flr. Area** Code Gross	FAR	Height per flr.	Elevation + roof	Elevation + mech.
1st	SEE PLAN	18,000	1	18,000			22.5	+ 22.5'	
2nd	" "	"	1	"			12.5	+ 35.0'	
3rd-11th	204' X 130'	26,520	9	238,680	274,680	7:1	"	+ 147.5'	
12th-20th	SEE PLAN	21,776	9	198,900	473,580 (20th Part Mechanical Flr.)	12.5:1	"	+ 260.0'	+ 276' (Penthouse) Only

SOURCE: Roger Owen Boyer & Associates

ZONING DISTRICT: C-3-O HEIGHT DISTRICT: 260 (240 & 150 SIMILAR) NUMBER OF STORIES: 20 +

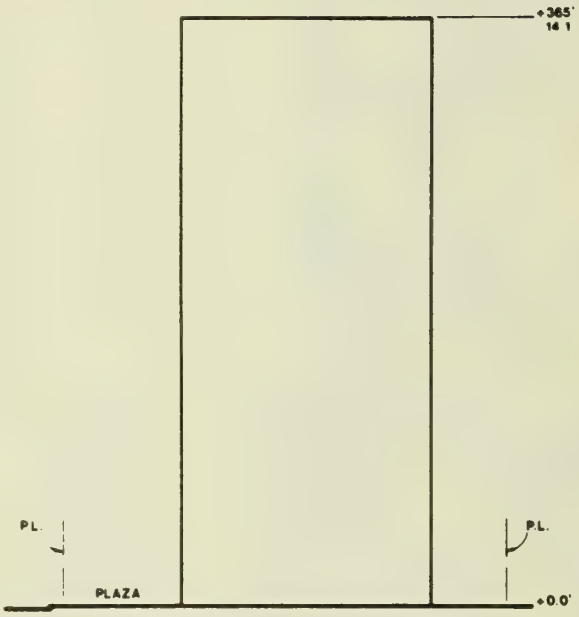
LOT AREA (SF): 1 SQ.FT.
37812.5 SQ.FT.

USE	(1) FINAL F.A.R. (F.A.R.):1 <A>	(2) TOTAL CODE GROSS (SF) SITE AREA X F.A.R.	(3) TOTAL ACTUAL GROSS (SF) (2) X 1.12	(4) EFFICIENCY % / 100 RENTED AREA	(5) NET AREA (SF) (3) X (4)	(6) CONSTRUCTION COST($/SF) TOTAL DEVELOP <B> COST	(7) TOTAL CONS. COST ($) (3) X (6)	(8) NUMBER OF UNITS	AVERAGE UNIT SIZE
OFFICE <C>	12.50	12.50	14.00	0.90	12.60	100.03	1400.42	-	-
OFFICE <C>	12.50	472656.25	529375.00	0.90	476437.50	100.03	52953381.25	-	-
OFF/RESIDENTIAL	12.50	12.50	14.00	0.90	12.60	93.25	1305.50	.0063	@1000 NET
OFF/RESIDENTIAL (50% RESIDENTIAL)	12.50	472656.25	529375.00	0.90	476437.50	93.25	49364218.75	238	@1000 NET
RESIDENTIAL	12.50	12.50	14.00	0.90	12.60	88.72	1242.08	.0126	@1000 NET
RESIDENTIAL	12.50	472656.25	529375.00	0.90	476437.50	88.72	46966150.00	476	@1000 NET
HOTEL	12.50	12.50	14.00	0.90	12.60	136.60	1912.40	.0206185567	@670 GROSS
HOTEL	12.50	472656.25	529375.00	0.90	476437.50	136.60	72312625.00	790	@670 GROSS

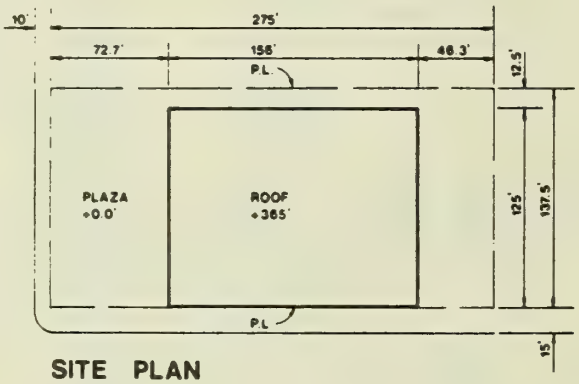
<A> NOTE: BULK CONTROLS LIMIT FINAL F.A.R. ON THIS SIZE LOT. OTHER SIZE LOTS MAY HAVE A HIGHER FINAL F.A.R.

<B> INCLUDES COST INCREASE OF 2% FOR BUILDING SETBACKS.

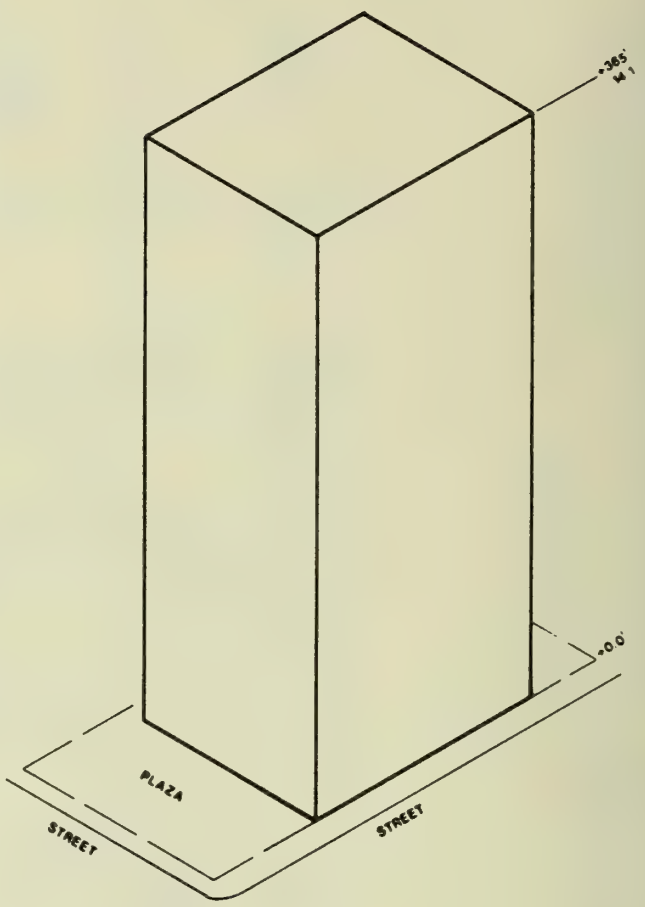
<C> 1.LANDMARK BONUSES NOT REQUIRED TO ACHIEVE THE ABOVE F.A.R.
2.SOME BONUSES REQUIRE HOUSING; WHICH IS LOCATED OFF-SITE IN THIS CASE.
THE OFF-SITE HOUSING COST IS NOT INCLUDED IN THE CONSTRUCTION COST SHOWN ABOVE.



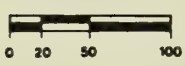
ELEVATION



SITE PLAN



ISOMETRIC



DISTRICTS

Zoning District - C-3-O
Height District - 575-I (500-S, 400-I and 400-S similar)

SOURCE: Roger Owen Boyer and Associates

FIGURE D.4:
Alternative 4 Building Prototype

TABLE D.7: BUILDING PROTOTYPE FOR ALTERNATIVE 4

Zoning District: C-3-O

Height and Bulk District(s): 575-I (500-S, 400-S & 400-I Similar)

Site Area: 137.5' X 275' = 37,812.5 Sq. Ft.**

Basic Floor Area Ratio Limits (FAR): 7.0 to 1 (Max. = 14.0 to 1)

Basic Allowable Gross* Floor Area (Sq. Ft.): 37,812.5 X 7.0 = 264,687.5

Bonuses:

Building Feature:	Calculations: (see site plan)		Maximum: %	Minimum: Sq. Ft.	Maximum: Sq. Ft.
9. PLAZA BONUS	100,000 / 10 = 10,000 S.F. Max.		100% Tot.	100,000	100,000
ORIENTATION	20%		20%		
WIND	20%		20%		
LANDSCAPING	20%		20%		
PEDESTRIAN ACCESS	20%	100% of Max.	20%		
PUBLIC SEATING	20%		20%		
10. HOUSING BONUS	Provide 100,000 Sq. Ft. of Housing Elsewhere		NA	100,000	
11. PRESERVATION BONUS				0	100,000
12. ENERGY CONSERVATION	Assume 30% Reduction		NA	50,000	125,000
13. TRANSPORTATION BONUS	1,234,800 X 264,687.5 = 61,738,560***			0	?
14. OTHER BONUSES	(Not Specified)		NA	15,000	?
TOTAL BONUSES ASSUMED FOR THIS SITE		=		265,000	(Max.) is 14.0 to 1)
BASIC ALLOWABLE AREA		=		264,687	
TOTAL CODE GROSS AREA		=		529,687	
FINAL BUILDING FAR		=		14.0 to 1	

* Gross floor area is defined in the San Francisco City Planning Code, Section 102.8, page 9. For the purposes of this analysis the area defined by the code shall be referred to as "Code Gross" and "Actual Gross" shall refer to the gross area of all parts, including those omitted by the Code.

** These lot dimensions were selected because they permit analysis of bulk guidelines and are typical lot dimensions occuring in the C-3-O District.

*** 529,374 Sq. Ft. X 1.12 = 592,899 X $104.13/SF = $61,738,560 - Bonus not used.

TABLE D.7: BUILDING PROTOTYPE FOR ALTERNATIVE 4 (Continued)

Calculate number of floor levels:

Floor Level	Size (Ft.)	Area Sq. Ft.	No. Flrs.	Tot. Flr. Area	Accumulative Flr. Area** Code Gross	FAR	Height per flr.	Elevation + roof	Elevation + mech.
1st	SEE SITE PLAN	19,500	1	19,500			15.0'	15.0'	
2nd-27th	125' X 156'	19,500	26	507,000	526,500	14 to 1	12.5'	340.0	+ 365'

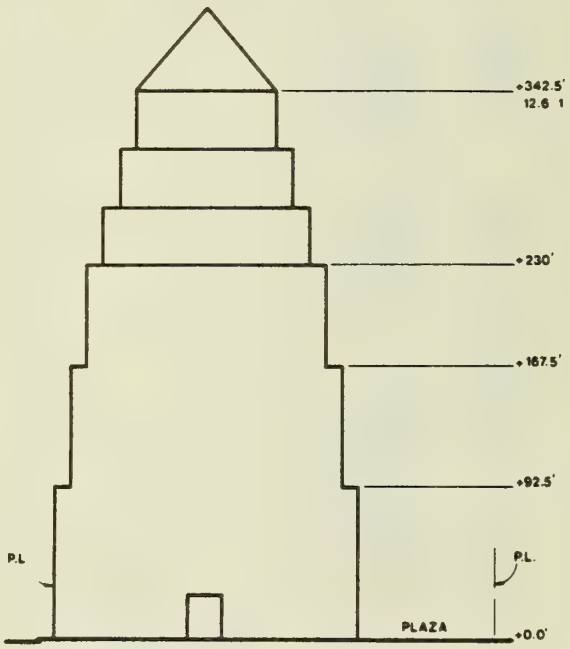
SOURCE: Roger Owen Boyer & Associates

ZONING DISTRICT: C-3-O HEIGHT DISTRICT: 575 (500 & 400 SIMILAR) (NORTH OF MARKET STREET ONLY) NUMBER OF STORIES: 29

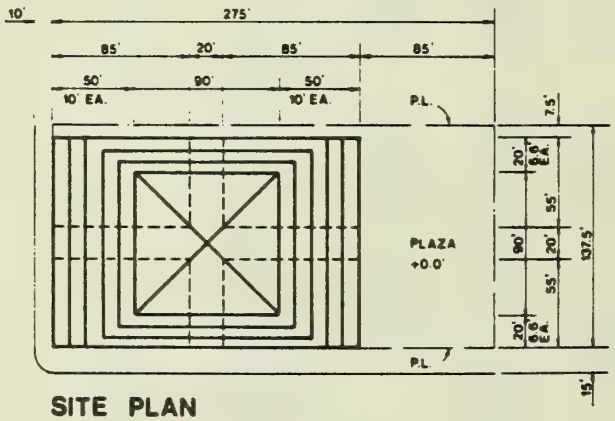
LOT AREA (SF): 1 SQ.FT.
37812.5 SQ.FT.

USE	(1) FINAL F.A.R. (F.A.R.):1	(2) TOTAL CODE GROSS (SF) SITE AREA X F.A.R.	(3) TOTAL ACTUAL GROSS (SF) (2) X 1.12	(4) EFFICIENCY % / 100 RENTED AREA	(5) NET AREA (SF) (3) X (4)	(6) CONSTRUCTION COST($/SF) TOTAL DEVELOP COST	(7) TOTAL CONS. COST ($) (3) X (6)	(8) NUMBER OF UNITS	AVERAGE UNIT SIZE
OFFICE <A>	14.00	14.00	15.68	0.90	14.11	101.89	1597.64	-	-
OFFICE <A>	14.00	529375.00	592900.00	0.90	533610.00	101.89	60410581.00	-	-
OFF/RESIDENTIAL	14.00	14.00	15.68	0.90	14.11	94.57	1482.86	.007056	@1000 NET
OFF/RESIDENTIAL (50% RESIDENTIAL)	14.00	529375.00	592900.00	0.90	533610.00	94.57	56070553.00	267	@1000 NET
RESIDENTIAL	14.00	14.00	15.68	0.90	14.11	89.54	1403.99	.014112	@1000 NET
RESIDENTIAL	14.00	529375.00	592900.00	0.90	533610.00	89.54	53088266.00	534	@1000 NET
HOTEL	14.00	14.00	15.68	0.90	14.11	138.50	2171.68	.023092783504	@670 GROSS
HOTEL	14.00	529375.00	592900.00	0.90	533610.00	138.50	82116650.00	885	@670 GROSS

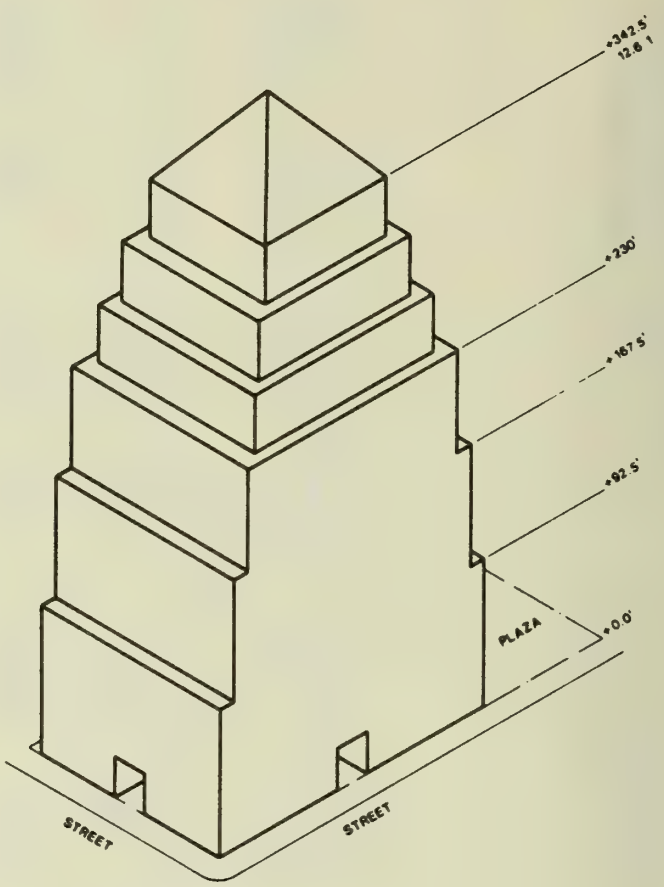
<A> SOME BONUSES REQUIRE HOUSING; WHICH IS LOCATED OFF-SITE IN THIS CASE.
THE OFF-SITE HOUSING COST IS NOT INCLUDED IN THE CONSTRUCTION COST SHOWN ABOVE.



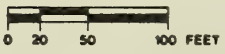
ELEVATION



SITE PLAN



ISOMETRIC



DISTRICTS

Zoning District - C-3-O
Height District - 700-S (550-S, 450-S and 400-S similar)

SOURCE: Roger Owen Boyer and Associates

FIGURE D.5:
Alternative 5 Building Prototype

TABLE D.8: BUILDING PROTOTYPE FOR ALTERNATIVE 5

Zoning District: C-3-O

Height and Bulk District(s): 700-S (550-S, 450-S & 400-S Similar)

Site Area**: 137.5' X 275' = 37,812.5 Sq. Ft.

Basic Floor Area Ratio Limits (FAR): 12.0 to 1 Max. Office & Retail
17.0 to 1 Max. Office, Retail Housing

Basic Allowable Gross* Floor Area (sq. ft.): 37,812.5 X 12.0 = 453,750 (w/o Housing)

Bonuses:

Building Feature:	Calculations: (see site plan)	Maximum: %		Minimum: Sq. Ft.	Maximum: Sq. Ft.
I. RETAIL ON SITE	ON 1st & 2nd FLOORS			23,000	?
	TOTAL BONUSES ASSUMED		=	23,000	?
	BASIC ALLOWABLE AREA		=	453,750	453,750
	TOTAL CODE GROSS AREA		=	476,750	
	FINAL BUILDING FAR		=	12.6 to 1	MAX.
NOTES:	1. RECREATION & OPEN SPACE REQUIRED***			19,070 S.F.	19,070 S.F.
	2. HOUSING ELSEWHERE = 290,400 SQ. FT.			-	-
II. RETAIL & HOUSING ON SITE	ON 1st and 2nd FLOORS			21,000	?
	5.0 X 37,812.5			189,062	189,062
	TOTAL BONUSES ASSUMED		=	210,062	?
	BASIC ALLOWABLE AREA		=	453,750	453,750
	TOTAL CODE GROSS AREA		=	663,812	
	FINAL BUILDING FAR		=	17.6 to 1	MAX.
NOTE:	RECREATION & OPEN SPACE REQUIRED			18,150 S.F.	
	HOUSING ELSEWHERE = 101,338 SQ. FT.				

* Gross floor area is defined in the San Francisco City Planning Code, Section 102.8, page 9. For the purposes of this analysis the area defined by the code shall be referred to as "Code Gross" and "Actual Gross" shall refer to the gross area of all parts, including those omitted by the Code.
** These lot dimensions were selected because they permit analysis of bulk guidelines and are typical lot dimensions occurring in the C-3-O District.
*** See next page for calculations.

TABLE D.8: BUILDING PROTOTYPE FOR ALTERNATIVE 5 (Continued)

Calculate number of floor levels:

Floor Level	Size (Ft.)	Area Sq. Ft.	No. Flrs.	Tot. Flr. Area	Accumulative Flr. Area** Code Gross	FAR	Height per flr.	Elevation + roof	Elevation + mech.
1st	SEE SITE PLAN	18,700	1	18,700			16.0'	+ 16.0'	
2nd	"	18,700	1	18,700			14.0'	+ 30.0'	
3rd-7th	190' X 130'	24,700	5	123,500	160,900		"	+ 92.5'	
8th-12th	170' X 130'	22,100	5	110,500	271,400		"	+ 155.0'	
13th (Mech)	170' X 130'	22,100	1	0	271,400		"	+167.5'	
14th-18th	150' X 130'	19,500	5	97,500	398,900		"	+ 230.0'	
19th-21st	130' X 116.67'	15,167	3	45,500	414,400		"	+267.5'	
22nd-24th	110' X 103.3'	11,367	3	34,100	448,500		"	+305.0'	
25th-27th	90' X 90'	8,100	3	24,300	472,800		"	+ 342.5'	
28th		3,950	1	3,950	476,750	12.6	"	+ 355.0'	
MECH.			1						+ 365'

(BUILDING TOP = + 390.0' +)

RECREATION AND OPEN SPACE REQUIREMENT - CALCULATIONS:

TOT. GROSS AREA / 25 = 19,070 S.F. REQ'D. AREA

PLAZA = 85' X 137.5' = 11,687.5 S.F.	=	11,687.5 SQ. FT.
GALLERIAS = (20' X 190') + (20' X 110') = 6000 S.F.	=	6,000.0
ARCADES = (7.5' X 190')	=	1,425.0
TOTAL AREA	=	19,112.5 S.F.

LOADING SPACE REQ'D.: 4 SPACES @ 12' X 35' + 1 SPACE @ 12' X 55' = 2,340 S.F. REQ'D.

	1st Flr.	2nd Flr.
LOADING	3,000	2,000
CORE (ELEV., ETC.)	4,700	4,700
RETAIL	11,000	12,000
GALLERIA	6,000	6,000
TOTAL	24,700	24,700

SOURCE: Roger Owen Boyer & Associates

ZONING DISTRICT: C-3-O HEIGHT DISTRICT: 700 (550,450 & 400 SIMILAR) NUMBER OF STORIES 28 +/- <D>
(FOR OFFICES)

LOT AREA (SF): 1 SQ.FT.
37812.5 SQ.FT.

USE	(1) FINAL F.A.R. (F.A.R.):1	(2) TOTAL CODE GROSS (SF) SITE AREA X F.A.R.	(3) TOTAL ACTUAL GROSS (SF) (2) X 1.12	(4) EFFICIENCY % / 100 RENTED AREA	(5) NET AREA (SF) (3) X (4)	(6) CONSTRUCTION COST($/SF) TOTAL DEVELOP <B> COST	(7) TOTAL CONS. COST ($) (3) X (6)	(8) NUMBER OF UNITS	AVERAGE UNIT SIZE
OFFICE <A>	12.61	12.61	14.12	0.90	12.71	111.06	1568.52	-	-
OFFICE <A>	12.61	476815.63	534033.50	0.90	480630.15	111.06	59309760.51	-	-
OFF/RESIDENTIAL	18.60	18.60	20.83	0.90	18.75	109.49	2280.90	.013203380281	@710 GROSS
OFF/RESIDENTIAL (39% RES.) <C>	18.60	703312.50	787710.00	0.90	708939.00	109.49	86246367.90	499	@710 GROSS
RESIDENTIAL <E>	23.00	23.00	25.76	0.90	23.18	101.51	2614.90	.023184	@1000 NET
RESIDENTIAL <E>	23.00	869687.50	974050.00	0.90	876645.00	101.51	98875815.50	877	@1000 NET
HOTEL <E>	20.00	20.00	22.40	0.90	20.16	157.93	3537.63	.032989690721	@670 GROSS
HOTEL <E>	20.00	756250.00	847000.00	0.90	762300.00	157.93	133766710.00	1264	@670 GROSS
<A> 1.RESIDENTIAL <E>	7.68	7.68	8.60	0.90	7.74	80.00	688.13	.012114929577	@710 GROSS
ELSEWHERE	7.68	290400.00	325248.00	0.90	292723.20	80.00	26019840.00	458	@710 GROSS

2.COST NOT INCLUDED IN ABOVE

<B> 1.INCLUDES COST INCREASE OF 8% FOR BUILDING SETBACKS AND SLOPED ROOF. NOTE: FEWER SETBACKS MAY BE REQUIRED, BUT THIS WOULD INCREASE THE HEIGHT; IF THE MAXIMUM F.A.R. IS TO BE RETAINED.
2.INCLUDES A COST INCREASE OF 1% FOR ARTWORK.

<C> ASSUMES THE RESIDENTIAL REQUIREMENT IS CONSTRUCTED ON THIS LOT.

<D> RESIDENTIAL AND HOTEL BUILDINGS MAY BE UP TO 50 STORIES IN HEIGHT.

<E> APPROXIMATE

APPENDIX E: ARCHITECTURAL RESOURCE EVALUATION

SAN FRANCISCO DEPARTMENT OF CITY PLANNING SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning (DCP) conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians/1/ assisted in the final determination of ratings for the approximately 10,000 buildings which were entered in an unpublished 60-volume record of the inventory. The rated buildings have been represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The maps are available for public inspection at the Department of City Planning, 450 McAllister Street./2/

The inventory assessed the architectural significance of the surveyed buildings from the standpoints of overall design quality and particular design elements. Both contemporary and older buildings were included, but their historical importance was not considered. Each building was given a numerical rating that corresponded to its architectural significance. This rating included consideration of its urban design context and overall environmental significance. The ratings ranged from a low of "0" to a high of "5". The buildings were also given a separate classification based on their architectural style. The architectural survey resulted in a listing of approximately the best ten percent of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or higher represent approximately the best two percent of the City's architecture.

HERITAGE SURVEY

The Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of a portion of the C-3 Use District in 1979. The inventory results were published in the book entitled Splendid Survivors./3/ Each building and parcel within the study area was described on field survey cards, photographed, and researched. Criteria considered in rating the buildings included architectural significance, historical/cultural significance, environmental significance and negative alterations. Summary ratings from "A" to "D" were then assigned to each building on the basis of these scores. The evaluated survey was re-reviewed by an outside panel of experts./4/ This evaluation of each parcel is supported

by a file which is available for review at the DCP and Heritage. The summary ratings, "A" through "D", indicate the following:

A. Highest Importance - Individually the most important buildings in downtown San Francisco, distinguished by outstanding qualities of architecture, historical values, and relationship to the environment. All A-group buildings are eligible for the National Register and are considered to be of highest priority for City Landmark status.

B. Major Importance - Buildings which are of individual importance by virtue of architectural, historical and environmental criteria. These buildings tend to stand out for their overall quality rather than for any particular outstanding characteristics. B-group buildings are considered to be eligible for listing on the National Register.

C. Contextual Importance - Buildings which are distinguished by their scale, materials, compositional treatment, cornice or other features. They provide the setting for more important buildings and they add visual richness and character to the downtown area. Many C-group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance - Buildings which are insignificant examples of architecture by virtue of original design, or more frequently, insensitive remodeling.

NOT RATED: Buildings which have been built or have undergone insensitive exterior remodelings since 1945./5/

In 1982, Heritage surveyed the portion of the C-3 Use District which had been excluded from Splendid Survivors. This survey was completed using the same system of evaluation as was used in the original Splendid Survivors survey. Like the original survey, the supplemental survey was re-reviewed by an outside panel of experts./6/ The evaluation of each parcel in this supplemental survey is also supported by a file which is available for public review at the DCP and Heritage. The file lists buildings by address in alphabetical and numerical order. The following information, when available, is included for each entry: name of the structure, block and lot number, date of construction, height of the building in stories, and the architect, engineer, builder or contractor.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is a list of cultural resources which are architecturally, historically and culturally significant to the nation, the states, and individual localities. The list is maintained by the U.S. Department of the Interior. A listing on the National Register provides a degree of protection against demolition or alteration by federally licensed or funded projects. However, it affords no protection against private development, and therefore has limited legal usefulness in preserving buildings in downtown San Francisco. Properties listed on the National Register are eligible for a variety of grants and loans, and for tax relief under federal tax policies. The above factors may contribute to the preservation of a building and would also discourage the demolition of a Natonal Register Property by a federally funded project.

Presently, there are nine individual C-3 District buildings on the National Register of Historic Places (see Table E.1). Lotta's Fountain and the Cable Cars are also listed. In addition to these National Register Properties, the National Park Service also designates National Historic Landmarks. National Historic Landmarks are National Register Properties which have been given a higher degree of recognition but no greater legal protection. The three National Historic Landmarks in the C-3 District are the Cable Cars, the Old U.S. Mint at Fifth and Mission Streets, and the Bank of Italy Building at 552 Montgomery St.

CITY LANDMARKS

The San Francisco Planning Code provides for the designation as City Landmarks of structures, sites and areas of special character or historical, architectural or aesthetic interest (see Table E.2). In addition to the recognition it entails, the designation of a structure as a City Landmark may involve a prohibition against demolition or alteration for up to one year after an application is made for a demolition permit./7/

ARCHITECTURALLY AND/OR HISTORICALLY SIGNIFICANT BUILDINGS

On May 29, 1980, the San Francisco City Planning Commission approved Resolution No. 8600, "An Official Listing of Structures Warranting Special Concern for Preservation in Part or in Whole (as) Designated by the Commission."/8/ This list is also known as

TABLE E.1: C-3 DISTRICT BUILDINGS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

Name	Address	Block/Lot	City Landmark
Audiffred Building	1-21 Mission St.	3715/1	Yes
Bank of Italy(America)	552 Montgomery St.	228/28	No
Geary Theatre	415 Geary St.	316/1A	Yes
Hallidie Building	130 Sutter St.	288/27	Yes
Jessie St. Substation	220 Jessie St.	3706/70	Yes
Main Post Office	95 Seventh St.	3703/41	No
Mills Building	220 Montgomery St.	268/6,7,8	Yes
Old U.S. Mint	5th and Mission Sts.	3704/11	No
Rincon Postal Annex	Mission at Spear Sts. (55-77 Mission St.)	3716/1	Yes

SOURCE: National Register of Historic Places, Federal Register, Volume 44, No. 26. February 6, 1979 as updated Feb. 1980, Feb. 1981, Feb. 1982.

"Architecturally and/or Historically Significant Buildings in the Downtown" and consists generally of buildings rated "A" and "B" on the Heritage survey and "3" or higher on the DCP survey.

CONTRIBUTORY BUILDINGS

As part of its planning study, Guiding Downtown Development/9/, the Department of City Planning published a list of "Contributory Buildings" in July 1982. The DCP's definiton is as follows: "Contributory buildings" are part of a cluster of three or more buildings which are either significant buildings (i.e. buildings on the list adopted by the City Planning Commission) or C-Rated buildings. A "Cluster" indicates buildings on the same lot, or on contiguous lots, or on lots which would be contiguous if they were not separated by a street. Cluster buildings can be viewed at street level as a group. These buildings are valued for their harmonious relationships with adjacent significant buildings. These relationships strengthen the overall urban fabric, and often provide the setting from which a significant architectural resource derives its importance.

TABLE E.2: CITY LANDMARKS IN THE C-3 DISTRICT

Name	Address	Block/Lot
Bank of California	400 California St.	239/3
Audiffred Building	1-21 Mission St.	3715/1
Garden Court of the Palace Hotel	New Mont. / Market St.	3707/52
Original U.S. Mint and Subtreasury	608 Commercial St.	227/29
Hallidie Building	130 Sutter St.	288/27
V.C. Morris Building	140 Maiden Ln.	309/19
Lotta's Fountain	Pedestrian Island/Geary/ Kearny Sts.	
Mills Bldg. and Tower	220 Montgomery St.	268/6,7,8
Samuels Clock	Sidewalk at Market/Powell Sts.	
Geary Theater	415 Geary Blvd.	316/1A
Jessie Street Substation	220 Jessie St.	3706/70
Rincon Postal Annex	Mission at Spear Sts.	3716/1
A. Borel & Co.	440 Montgomery St.	239/12
Italian-American Bank	460 Montgomery St.	239/14
S.F. Mining Exchange	350 Bush St.	269/3
Hammersmith Building	301-303 Sutter St.	294/1
Hibernia Bank	1 Jones St.	349/3
Union Trust Bank of Wells Fargo	744 Market St.	312/6
Security Pacific Bank	1 Grant Ave.	313/8
Mechanics Institute	57-65 Post St.	311/13
Home Telephone Bldg.	333 Grant Ave.	286/2
PG&E Old Station J	569 Commercial St	228/11
Old Firestation No. 2	466 Bush St.	270/9c
The Hoffman Grill	619 Market St.	3707/55
Buich Building	240 California St.	237/9
Jack's Restaurant	615 Sacramento St.	240/14
Flood Building	870-898 Market St.	329/5
Flatiron Building	540-548 Market St.	291/1
Phelan Building	760-784 Market St.	328/1
St. Patricks Church	756 Mission St.	3706/68
Old St. Marys Church	680 California St.	241/12

SOURCE: San Francisco City Planning Code

SUMMARY

A summary of buildings in the C-3 District that are named in the surveys and lists of landmarks discussed above is shown in Table E.3./10/ The table lists by subarea, the name of each building, its address, block and lot number, DCP rating (if no other rating has been

assigned), Heritage rating, landmark status, and notes concerning its status. The table does not include any buildings demolished before December 31, 1982. Figures E.1 through E.10 provide reference maps for Table E.3. The figures show the locations of rated buildings within the C-3 Use District and their respective block and lot numbers. Table E.4 shows the rated buildings in the C-3 District that were partially or totally demolished between 1978 and November 1982.

NOTES - Architectural Resource Evaluation

/1/ Members of the advisory review committee include John Beach, Architectural Historian; Michael Corbett, Architectural Historian; John Frisbee, Regional Director, National Trust for Historic Preservation; Mrs. G. Bland Platt, former President, San Francisco Landmarks Preservation Advisory Board; James Ream, Architect; Judy Waldhorn, Architectural Historian; Francis Whisler, Architect; Sally Woodbridge, Architectural Historian; William Coburn, Architect; Robert Hersey, Architect; Al Lanier, Architect.

/2/ San Francisco Department of City Planning, map entitled 1976 Architectural Inventory.

/3/ The Foundation for San Francisco's Architectural Heritage, Splendid Survivors, San Francisco, 1979.

/4/ Three independent outside professionals were invited to review the results. The reviewers were Randolph Delehanty, an urban historian at Heritage, with specialized knowledge of San Francisco and its architecture; Jeremy Kotas, an architect in the Urban Design section of the San Francisco Department of City Planning, who was responsible for the Department's citywide 1976 Architectural Inventory; and Joan Draper, an architectural historian particularly familiar with San Francisco's post-fire architecture, formerly at the University of California at Berkeley, and now an Assistant Professor in the School of Architecture at Montana State University. The procedure used in the formal review reinforced the objectivity of the evaluation, and explained any adjustments made.

/5/ The Foundation for San Francisco's Architectural Heritage. Splendid Survivors, (1979, pages 12-13).

/6/ The evaluators in this phase were Randolph Delehanty, Jeremy Kotas and Sally Woodbridge, each of whom reviewed every file, and Paul Groth, Bruce Judd, John Liu, and Christopher Yip, who reviewed portions of the files about which they were particularly knowledgeable.

/7/ City and County of San Francisco, Planning Code, Section 10.01, 1979.

/8/ San Francisco Planning Commission Resolution No. 8600, May 29, 1980.

/9/ City and County of San Francisco, Department of City Planning, Guiding Downtown Development, July 1982.

/10/ Buidlings rated "C" by Heritage, but not shown in any other lists or ratings described herein, are not shown in Table E.3.

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT

Notes:

Information shown in this table incorporates the latest Heritage revised list (December 1, 1982) which supersedes earlier information obtained from Splendid Survivors, Guiding Downtown Development, and the June 11, 1982 C-3 District Supplemental Survey by Heritage. A small number of C-rated buildings appear in Splendid Survivors but not on any other current Heritage or Guiding Downtown Development list. These have not been incorporated into the tables and maps presented herein. Data shown are current as of December 31, 1982. Buildings demolished before this date are not shown. Buildings are listed by Subarea, Assessor's Block Number, and Lot Number.

N&C — An "X" in this column indicates a building designated as a landmark in the National Register of Historic Places and/or a building designated as a City Landmark in the San Francisco Planning Code.

H — A letter in this column indicates the rating for a building listed in surveys by the Foundation for San Francisco's Architectural Heritage, 1979, and 1982.

A two-digit numerical code in this column indicates a building rated "3" or higher in the San Francisco Department of City Planning Inventory of Buildings, but not rated in the Heritage surveys. The first number in the code indicates the overall architectural significance of the building; the second number is the summary rating for all factors rated.

(A) — Building is on site of a project under formal review by Department of City Planning (DCP).

(B) — Building is on site of a project approved for construction (but not under construction) by the DCP and/or the City Planning Commission.

(C) — Partial interior demolition has been completed or is proposed.

(D) — Partial exterior demolition has been completed or is proposed.

(E) — Complete demolition is proposed.

(F) — Building is located in Yerba Buena Center Redevelopment Area.

(G) — Building is listed in "Architecturally and/or Historically Significant Buildings in the Downtown" approved by the City Planning Commission on May 29, 1980, Resolution No. 8600.

SOURCE: Roger Owen Boyer and Associates

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 1

SUBAREA 1 (C-3-O DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
0	0					
206	2	BURROUGHS BUILDING	447 BATTERY		B	<G>
207	35		545 SANSOME		C	
208	8	HOTEL JUSTICE	636-640 CLAY		C	
208	10	ROYAL HOTEL	662-672 CLAY		C	
208	11	HOTEL ANTWERP	700-708 KEARNY		C	
208	12	WOOD BUILDING	712-716 KEARNY		C	
226	4	EDWARD J. JORGENSEN	619 KEARNY		A	
226	5	JOSSELYN BUILDING	619-621 KEARNY		C	
226	6	WALLACE BUILDING	615-617 KEARNY		C	
226	7	LUNDSTROM HAT WORKS	605 KEARNY		C	
226	8		601 KEARNY		C	
226	9		706-712 SACRAMENTO		C	
226	10	CHEW BUILDING	716-722 SACRAMENTO		C	
226	26	SCHULTZ BLDG.	715 COMMERCIAL		C	
227	6		615-617 COMMERCIAL		C	
227	8	JOSSELYN BUILDING	616-618 SACRAMENTO		C	
227	9		624-628 SACRAMENTO		C	
227	10	MRS. H. DEW. KITTLE	630 SACRAMENTO		C	
227	11	MORGANTHALER LINO.	632-646 SACRAMENTO		C	
227	13	COBB BUILDING	648-656 SACRAMENTO		C	
227	14	BAUER & SCHWEITZER	658-662 SACRAMENTO		C	
227	15	JOSSELYN BUILDING	666-668 SACRAMENTO		C	
227	16	CHUY LUNG BAZAAR	672 SACRAMENTO		B	
227	17	THE CHINESE TIMES	686 SACRAMENTO		C	
227	18	RICH. W. MOLLER BLDG	688-690 SACRAMENTO		C	
227	20	SHIRLEY BLDG.	600 KEARNY		B	
227	21	TREADWELL BLDG.	610 KEARNY		C	
227	23	685 COMMERCIAL BLDG.	685 COMMERCIAL		B	
227	24	GISELMAN BLDG.	681 COMMERCIAL		B	
227	25		673-675 COMMERCIAL		C	
227	26	SOLOMON BUILDING	667-671 CLAY		C	
227	27	JAMES H. HJUL BLDG.	653-655 CLAY		C	
227	28	HEWITT BUILDING	627-629 CLAY		C	
227	29	OLD U.S. SUBTREASURY	608 COMMERCIAL	X	A	<BCD>
227	33	E.W. FERGUSON HOTEL	678-692 CLAY		C	
227	34	MARTEL BUILDING	630-632 KEARNY		C	
227	35	TILLMAN HOTEL	638-648 KEARNY		C	
227	36		652-660 KEARNY		C	
227	37	THE CAMPUS BOOKSTORE	689 CLAY		C	
227	40		671-677 CLAY		C	
227	41	HANS KOEPKE BLDG.	667-669 CLAY		C	
227	42		661-665 CLAY		C	
227	43	WARBUR ESTATES CO.	651-659 CLAY		C	
227	44	ROSENBERG HOTEL	643-647 CLAY		C	
227	45		635-639 CLAY		C	
228	2	FUGAZI BUILDING	415 SANSOME		B	<G>
228	3		407-411 SANSOME		C	
228	4	SUN BUILDING	401 SANSOME		C	<G>
228	6	P.G.&E. STATION J	530 SACRAMENTO		B	<G>

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 1 (C-3-O DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
228	9		558 SACRAMENTO		C	
228	10		560 SACRAMENTO		C	
228	11	PAOLI'S ANNEX	568 SACRAMENTO		B	<CG>
228	11	P.G.&E. STATION J	569 COMMERCIAL	X	A	<CG>
228	13	AMERICAN ASIAN BANK	500 MONTGOMERY		B	<G>
228	15	PAOLI'S	520 MONTGOMERY		B	<G>
228	22	ZOTT'S	554 COMMERCIAL		A	<G>
228	23	DON NUNZIO'S	564 COMMERCIAL		B	<G>
228	28	BANK OF ITALY(& LOT 29)	560 MONTGOMERY	X	A	<G>
228	30		565 CLAY		C	
228	31		559-561 CLAY		C	
228	32		553-557 CLAY		C	
229	3	FEDERAL RESERVE BANK	400 SANSOME		B	<G>
235	5	LAWRENCE SYSTEMS	33 DRUMM		B	<G>
235	9	MARVIN BUILDING	24 CALIFORNIA		B	<G>
236	5	MARINE BUILDING	158 CALIFORNIA		B	<G>
236	6		222 FRONT		B	<G>
237	1	DE BERNARDI & CO.	51 FRONT		B	<G>
237	9	BUICH BUILDING	240 CALIFORNIA	X	A	<G>
237	10	WELCH BUILDING	244 CALIFORNIA		B	<G>
237	11	FIDELITY BUILDING	260 CALIFORNIA		A	<G>
238	1	EASTMAN KODAK BLDG.	241 BATTERY		B	<G>
239	2	SECURITY BUILDING	343 SANSOME		B	<G>
239	3	BANK OF CALIFORNIA	400 CALIFORNIA	X	A	
239	9	KOHL BUILDING	400 MONTGOMERY		B	<G>
239	12	A.BOREL & CO.	440 MONTGOMERY	X	A	<C>
239	14	ITALIAN AMERICAN BK.	460 MONTGOMERY	X	A	<C>
240	2	KEMPER BUILDING	417 MONTGOMERY		C	
240	3	FINANCIAL CTR. BLDG.	405 MONTGOMERY		A	<G>
240	14	JACK'S RESTAURANT	615 SACRAMENTO	X	B	<G>
259	21	CALIF. COMMERCIAL U.	315 MONTGOMERY		A	<G>
260	2	FIREMAN'S FUND ANNEX	233 SANSOME		B	<G>
260	3	T.C. KIECYLFF	231 SANSOME		B	<G>
260	5	ROYAL INSURANCE CO.	201 SANSOME		A	<G>
260	6	ORIENT BUILDING	332 PINE		B	<G>
260	7	SEIBACH AND DEANS	340-344 PINE		C	
260	8	DIVIDEND BUILDING	348-354 PINE		C	
260	9	PHOENIX BUILDING	358-360 PINE		C	
260	10	OLD BANK OF AMERICA	300 MONTGOMERY		B	<G>
260	15	MERCHANTS EXCHANGE	465 CALIFORNIA		A	<G>
260	16	INSURANCE EXCHANGE	433 CALIFORNIA		A	<G>
261	1	ROBERT DOLLAR BLDG.	301 CALIFORNIA		B	<DG>
261	2	STANLEY DOLLAR BUILD	111-141 BATTERY		C	<E>
261	7	AMERICAN INTERNAT'L	200 SANSOME		B	<G>
261	10A	J. HAROLD DOLLAR BUI	341 CALIFORNIA		B	<G>
266	6	POSTAL TELEGRPH BLDG	22 BATTERY		A	<G>
266	8	LEVI STRAUSS BLDG.	98 BATTERY		B	<G>
267	1	DONOHOE BLDG.	99 BATTERY		B	<G>
267	2		77 BATTERY		C	
267	4	SHELL BUILDING	100 BUSH		A	<G>

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 3

SUBAREA 1 (C-3-O DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
267	9	HEINEMAN BUILDING	130 BUSH		A	<G>
267	10	ADAM GRANT BUILDING	114 SANSOME		A	<G>
268	1	STOCK EXCHANGE BLDG.	301 PINE		A	<G>
268	1A	STOCK EXCHANGE BLDG.	155 SANSOME		A	<G>
268	2	OLD STD. OIL BLDG.	200 BUSH		A	<G>
268	6	MILLS BUILDING (INCL.7,8)	220 MONTGOMERY	X	A	
268	12	EXCHANGE BLOCK BLDG.	369 PINE		C	
268	16	OLD CHMBR OF COMMRC.	333 PINE		B	<G>
268	17	INECON BUILDING	240 MONTGOMERY		C	
268	19	BARNESON BUILDING	256 MONTGOMERY		C	
269	1	RUSS BLDG	235 MONTGOMERY		A	<G>
269	3	S.F. MINING EXCHANGE	350 BUSH	X	A	<AG>
269	4	SAM'S GRILL	364 BUSH		C	
269	5	SHASTA HOTEL	380 BUSH		C	
269	6		429-431 BUSH		C	
269	9	HARRIGAN/WEIDENMULLE	344 KEARNY		B	<G>
269	10		346 KEARNY ST.		B	<G>
269	12		362 KEARNY ST.		B	<G>
269	14		28 BELDEN		C	
269	15		40 BELDEN		C	
269	18		52 BELDEN		C	
269	20		485 PINE		C	
269	21	SAROYAN BUILDING	471-475 PINE		C	
269	22	TEMPLE HOTEL	469 PINE		C	
269	24	DUFFY'S/GRAZIANO'S	453 PINE		C	
270	1	KEARNY-PINE BLDG.	353-359 KEARNY		C	
270	2	MACDONOUGH BLDG.	333 KEARNY ST.		B	<G>
270	3	WESTINGHOUSE BLDG.	325-329 KEARNY		C	
270	5		315 KEARNY		C	
287	1	SCHMIDT BUILDING	251 KEARNY		B	<G>
287	2	MCKAY BUILDING	243 KEARNY		C	
287	3		237-241 KEARNY		C	
287	4		227-231 KEARNY		C	
287	5		219-225 KEARNY		C	
287	6		215-217 KEARNY		C	
287	7		209 KEARNY		C	
287	8		201 KEARNY ST.		B	<G>
287	22		429-431 BUSH		C	
287	23		415 BUSH		C	
288	1	ALEXANDER BUILDING	144 MONTGOMERY		B	<G>
288	6	CALIFORNIA PACIFIC	105 MONTGOMERY		B	<CG>
288	7	FRENCH AMERICAN BANK	108 SUTTER		A	<G>
288	8		126 SUTTER		C	
288	10	CENTRAL REALTY	154 SUTTER		B	<AG>
288	11		200 KEARNY		A	<AG>
288	14	MARSTEN BUILDING	240 KEARNY		B	<G>
288	16		260 KEARNY		C	
288	17	J.E.ADAMS BUILDING	381 BUSH		B	<G>
288	21		351 BUSH ST.		B	<AG>
288	25	HOTEL STANFORD	246-250 KEARNY		C	

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 4

SUBAREA 1 (C-3-O DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
288	27	HALLIDIE BUILDING	130 SUTTER	X	A	
288	29	ROBINS BUILDING	220-226 KEARNY		C	<A>
289	1	STANDARD OIL BLDG.	225 BUSH		B	<G>
289	3	ANGLO/LNDN/PARIS BNK	1 SANSOME		A	<CG>
289	6		130 MONTGOMERY		B	<G>
291	1	FLATIRON BUILDING	540 MARKET	X	A	<G>
291	2		550 MARKET		C	
291	3		554 MARKET		C	
291	4	PATRICK & COMPANY	560 MARKET		B	<G>
291	5	CHANCERY BUILDING	562 MARKET		B	<G>
291	5B	FINANCE BUILDING	576 MARKET		B	<G>
291	6	HOBART BUILDING	582 MARKET		A	<G>
292	1	HUNTER-DULIN BLDG.	111 SUTTER		A	<G>
292	1A	CROCKER BANK	1-25 MONTGOMERY		A	<CDG>
292	9	SUTTER HOTEL	171 SUTTER		C	
293	1	ARGONAUT BUILDING	161 KEARNY		B	<G>
293	2	BARTLETT/DOE BLDG	153 KEARNY		B	<G>
293	3	YOUNG BUILDING	123 KEARNY		B	<G>
310	2	ROULLIER BUILDING	49 KEARNY		B	<G>
310	3	OSCAR LUMING BDG.	45 KEARNY		B	<G>
310	4	BALDWIN BUILDING	25 KEARNY		B	<G>
310	5	SCHMIDT BUILDING	10 GEARY		B	<G>
310	6	FIDELITY BUILDING	2 GEARY		B	<G>
310	22	O'CONNOR/MOFFAT BLDG	117 POST		B	<G>
311	5		660 MARKET		B	<G>
311	8	MASKEY BUILDING	46 KEARNY		B	<EG>
311	10	BULLOCK & JONES BLDG	60 GEARY		B	<EG>
311	11	FEDERAL SAVINGS BLDG	79 POST		C	<E>
311	13	MECHANICS INSTITUTE	57 POST	X	A	<G>
312	10	CITIZEN'S SAVINGS	704 MARKET		A	<G>
3707	1	SANTA FE BUILDING	601 MARKET		B	<G>
3707	2		609-611 MARKET		C	
3707	2	SCHUMACHER BUILDING	20 SECOND ST.		B	<G>
3707	9		70-72 SECOND ST.		C	
3707	10		76 SECOND ST.		C	
3707	11		84-88 SECOND ST.		C	
3707	12		90-96 SECOND ST.		C	
3707	13	ATLAS BLDG.	602-606 MISSION		C	
3707	14	CROSSLEY BUILDING	79 NEW MONTGOMERY		C	
3707	20	GRAPHICS BUILDING	662 MISSION		C	<G>
3707	29	BREEN'S	71-77 THIRD ST.		B	<FG>
3707	33	CALL BUILDING	74 NEW MONTGOMERY		A	<G>
3707	35	SHARON BUILDING	55 NEW MONTGOMERY		A	<G>
3707	44	PALACE GARAGE	111 STEVENSON		B	<G>
3707	51	MONADNOCK BUILDING	681 MARKET		B	<G>
3707	52	PALACE HOTEL	639 MARKET	X	A	<G>
3707	54		621 MARKET		C	<A>
3707	55	HOFFMAN GRILL	619 MARKET	X	B	<AG>
3707	56		613-615 MARKET		C	<A>
3707	57	EXAMINER BUILDING	691 MARKET		B	<AG>

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 5

SUBAREA 1 (C-3-O DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3707	59	METROPOLITAN TRUST	625 MARKET		B	<AG>
3708	17	CHANCERY BUILDING	562 MISSION		B	<AEG>
3708	19	WELLS FARGO	71 SECOND ST.		A	<G>
3708	22	ONE ECKER	16 JESSIE		B	<G>
3708	29		64 JESSIE		B	<G>
3708	34	CALIFORNIA FARMER	83 STEVENSON		B	<G>
3709	8	TERMINAL PLAZA	440 MISSION		B	
3709	11	BLAKE,MOFFIT & TOWNE	41 FIRST		B	<EG>
3709	12	SHELDON BUILDING	9 FIRST ST.		B	<EG>
3711	14A	P.G. & E.	245 MARKET		A	<G>
3711	18	MATSON BUILDING	215 MARKET		A	<G>
3713	6	SOUTHERN PACIFIC	1 MARKET		A	<G>
3715	1	AUDIFFRED BLDG.	1 MISSION	X	A	
3715	2		110-116 EMBARCADERO		C	
3715	4	HARBOR HOTEL (& LOT 5)	128-132 EMBARCADERO		C	
3715	5	HIHN/MEYER BUILDING	137-143 STEUART		C	
3715	6	LINCOLN HOTEL, ETC.	144-146 EMBARCADERO		C	
3715	7	ARMY-NAVY YMCA	166 EMBARCADERO		A	
3716	1	RINCON ANNEX POST OF	55 MISSION	X	A	
3717	2	GEO. E. BILLINGS	124-134 SPEAR		C	
3719	1	W.P. FULLER & CO.	301 MISSION		B	
3721	47	FORD BUILDING	90 NATOMA		C	
3721	48	MARCUS MODRY BLDG.	163 SECOND STREET		C	
3721	49	BOTHIN REAL ESTATE	149-157 SECOND ST.		C	
3721	50	BARKER,KNICKERBOCKER	141 SECOND ST.		B	
3721	51	MORTON L. COOK BLDG.	133 SECOND STREET		C	
3721	52	JOHN G. RAPP CO.	83 MINNA		C	
3721	71	RAPP BLDG.	121 SECOND		B	
3721	81		549 MISSION		B	<G>
3722	2		120-130 SECOND ST.		C	
3722	3	MORTON L. COOK BLDG.	132 SECOND ST.		B	
3722	4	BOTHIN REAL ESTATE	144-154 SECOND ST.		C	<B>
3722	5	THE JACKSON BLDG.	156-160 SECOND ST.		C	
3722	6	N CLARK & SONS (PKG)	116 NATOMA		B	
3722	7		137-159 NEW MONTGOM.		C	
3722	8	PACIFIC TELEPHONE	140 NEW MONTGOMERY		A	<G>
3722	63	WILLIAMS BUILDING	101 THIRD STREET		B	<FG>
3722	69	VERONICA BUILDING	647-649 MISSION		C	
3722	70		641-643 MISSION		C	
3722	71	RIALTO BUILDING	116 NEW MONTGOMERY		A	<G>
3722	72	STANDARD BUILDING	111-121 N MONTGOMERY		C	
3722	73	KORACORP BUILDING	617-623 MISSION		C	

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 1

SUBAREA 2 (C-3-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3715	8		179-187 STEUART		C	
3719	7	EASTWOOD GARAGE	324-326 HOWARD		C	
3719	8	MCINTOSH & WOLPMAN	342 HOWARD		B	
3719	11	EMILY CHABOT WAREHSE	177-181 FREMONT		C	
3720	7		167-199 FIRST ST.		C	
3721	11	PRINTING ARTS	500 HOWARD		B	
3721	13	CA.BOILER WKS./GAR.	522-528 HOWARD		B	
3721	14	BOTHIN REAL ESTATE	530-532 HOWARD		C	
3721	15	FED.SECURITY CO.BLDG	540 HOWARD		C	
3721	16		546 HOWARD		C	
3721	19		562-564 HOWARD		C	
3721	20	F.C. JANSSEN BLDG.	568 HOWARD		B	
3721	21	DAHL-BECK ELEC. CO.	580-586 HOWARD		C	
3721	22	DOWNEY BLDG.	590-594 HOWARD		C	
3721	25	ELECTRICAL BLDG.	165 SECOND ST.		B	
3721	27A		83 NATOMA		C	
3721	28		81 NATOMA		C	
3721	29	JOHN V OPPEL BLDG.	77-79 NATOMA		C	
3721	35	BOTHIN REAL ESTATE	39 NATOMA		C	
3721	88	MCELROY BLDG.	35-37 NATOMA		C	
3722	11	EMERSON MFG. CO.	161 NATOMA		C	
3722	12	BOSTON RUBBER SHOE	658 HOWARD		C	
3722	13	UNDERWRITER'S	147 NATOMA		B	<G>
3722	14		145 NATOMA		23*	<G>
3722	16		168-170 SECOND ST.		C	
3722	19	BARKER,K,& B BLDG.	182-198 SECOND ST.		C	
3722	20	MERRITT BLDG.	606-612 HOWARD		C	
3722	22	FURNITURE EXCHANGE	170-180 N.MONTGOMERY		C	
3722	27	HEMPHILL BLDG.	666-672 HOWARD		C	
3735	4	HOLABIRD BLDG.	611 HOWARD		C	
3735	5		631 HOWARD		C	<G>
3735	8	PLANTERS HOTEL	286-298 SECOND ST.		C	
3735	9	LOUIE LURIE BLDG.	608 FOLSOM		C	
3735	10	COLLINS-HENCKE CORP.	610-622 FOLSOM		C	
3735	39	SHARON ESTATE CO.	667 HOWARD		B	
3735	41	S.F. NEWS CO.	657 HOWARD		B	<G>
3735	42		651 HOWARD		C	
3735	47	R.W.KINNEY CO. BLDG.	645 HOWARD		C	
3736	1		501-507 HOWARD		C	
3736	3A		206-212 FIRST ST.		C	
3736	4		220-228 FIRST ST.		C	
3736	6	PHILLIPS BLDG.	234 FIRST		A	
3736	16	S.F. WELDING & FAB.	31 CLEMENTINA		C	
3736	17	GEORGE W. CASWELL CO	530 FOLSOM		B	
3736	24		568 FOLSOM		C	
3736	25	J.E. BIER BLDG.	572 FOLSOM		B	
3736	27	BOTHIN REALTY CO.	580-590 FOLSOM		C	
3736	29		596 FOLSOM		C	
3736	36		69 CLEMENTINA		C	
3736	60		64-66 CLEMENTINA		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 2 (C-3-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3736	67	MARK LALLY CO.	235-247 SECOND ST.		C	
3736	78		19 TEHAMA		C	
3736	83	MARTIN BLDG.	527-529 HOWARD		C	
3736	86	AARON KAHN WAREHSE.	553-555 HOWARD		C	
3736	91	BRIZARD & YOUNG	72 TEHAMA		B	
3736	92		74 TEHAMA		C	
3736	93		78-80 TEHAMA		C	
3736	94		90 TEHAMA		C	
3736	95	RBT. MCMILLAN BLDG.	217 SECOND ST.		C	
3736	96	H. E. BOTHIN BLDG.	205-215 SECOND ST.		C	
3736	98	LENT BLDG.	589-591 HOWARD		C	
3736	99	CRELLIN ESTATE CO.	583 HOWARD		C	
3736	100	TAYLOR BLDG.	577-579 HOWARD		C	
3736	102	E.J.BROOKS & CO.	571 HOWARD		C	
3736	107		557 HOWARD		C	
3736	110	GREELEY BLDG.	547-549 HOWARD		C	
3736	111		543 HOWARD		C	
3736	112	MERCEDES CO. BLDG.	531-533 HOWARD		C	
3736	114	LOUIS LURIE BLDG.	525 HOWARD		C	
3736	116	PHILLIPS VAN ORDEN	511-521 HOWARD		C	
3737	1	THOMSEN MACHINE WKS.	407 HOWARD		C	
3737	1B	H.N.COOK BELTING CO.	401 HOWARD		C	
3737	2	PHILADELPHIA STOR.CO	218 FREMONT		C	
3737	3	B.C.VAN EMON ELEV.	224 FREMONT		C	
3737	4		244 FREMONT		C	
3737	22		237 FIRST ST.		C	
3737	23		231 FIRST		B	
3738	2	BUTLER BLDG.	215 FREMONT		C	
3740	1	FOLGER COFFEE CO. BL	101 HOWARD		A	
3741	21	SEAMEN'S INSTITUTE	240-242 STEUART		C	

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3509	2	MOHR BROS.BLDG.	116 NINTH ST.		C	
3509	3	THE LEADER PUB. CO.	122 NINTH ST.		C	
3509	5		140-146 NINTH ST.		C	
3509	7	MCELROY HOTEL/EL DOR	150-160 NINTH ST.		C	
3509	8		190 NINTH ST.		C	
3509	8A	L.A. MYERS BLDG.	170-174 NINTH ST.		C	
3518	1		1301-1315 HOWARD		C	
3518	2		220 NINTH ST.		C	
3518	3		228-230 NINTH ST.		C	
3518	4	GIACOBBI & SONS BLDG	234-240 NINTH ST.		C	
3518	5		244 NINTH ST.		C	
3518	6,7		248-252 NINTH ST.		C	
3518	8		258 NINTH ST.		C	
3518	11		272-274 NINTH ST.		C	
3518	33	AUTO. HOME LAUNDRY	45 DORE		C	
3518	35		1325-1331 HOWARD		C	
3724	68	PACIFIC GRAVUE CO.	325-329 MINNA		C	<B>
3725	6	ZIHN BLDG.	190 FIFTH ST.		C	
3725	7	FRANCIS VALENTINE CO	705-721 NATOMA		C	
3725	7	HOTEL GEORGE	194-198 FIFTH ST.		C	
3725	8		910 HOWARD		C	
3725	9	SWEET BLDG.	912 HOWARD		C	
3725	12	TEGELER BLDG.	924-926 HOWARD		C	
3725	14		934 HOWARD		C	
3725	15	LOUIE LURIE BLDG.	938 HOWARD		C	
3725	15	GEO. ZETT BLDG.	944-946 HOWARD		C	
3725	17		948-950 HOWARD		C	
3725	18	MYERS BLDG.	952-954 HOWARD		C	
3725	19		956-960 HOWARD		C	
3725	20	AFTON HOUSE	964 HOWARD		C	
3725	23	STERLING FURNITURE	974 HOWARD		C	
3725	24	STERLING FURNITURE	978-986 HOWARD		C	
3725	25	PLAZA HOTEL	988-998 HOWARD		C	
3725	26	ALTON/ALDER HOTELS	169-183 SIXTH ST.		C	
3725	31	R.BROWN BLDG.	445 NATOMA		C	
3725	33		70 MARY ST.		C	
3725	35		82 MARY ST.		C	
3725	42	CAELLINE	430 NATOMA		C	
3725	45	BOSWORTH BLDG.	50 MARY ST.		C	
3725	46		432-438 NATOMA		C	
3725	47	FOSTER & OREAR	440 NATOMA		C	
3725	49	GALE BLDG.	444-458 NATOMA		C	
3725	60	PASQUALETTI BLDG.	494-498 NATOMA		C	
3725	61	ABERDEEN/TAJ HOTELS	157-161 SIXTH ST.		C	
3725	62		151-155 SIXTH ST.		C	
3725	63	HOTEL MINALEE	139-149 SIXTH ST.		C	
3725	64	SUNNYSIDEHOTEL	133-135 SIXTH ST.		C	
3725	66	HOTEL AUBURN	481 MINNA		C	
3725	74		455 MINNA		C	
3725	75		453 MINNA		C	

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3725	76	DANNER PRINTING CO.	447-449 MINNA		B	
3725	79	HOTEL ROSE	117-131 SIXTH ST.		C	
3725	81	SCHMOLL BLDG.	101-115 SIXTH ST.		C	
3725	82	J.S.MORGAN & SONS	987-991		C	
3725	87	CALIF. CASKET CO.	959 MISSION		A	
3725	88		951-957 MISSION		C	
3725	89	LOUIS LURIE BLDG	947-949 MISSION		C	
3725	90		941-945 MISSION		C	
3725	93	CHRONICLE BLDG.	901-933 MISSION		C	
3726	1		100-102 SIXTH ST.		B	
3726	2	HOTEL HENRY	106-112 SIXTH		B	
3726	3	MITCHELL BLDG.	118-120 SIXTH ST.		C	
3726	12	HARBAND BLDG.	1014-1016 HOWARD		C	
3726	18	IDA GOLDBLATT APTS.	1040-1042 HOWARD		C	
3726	20	EGYPTIAN LACQUER BLD	1050 HOWARD		C	
3726	22	HARBAND BLDG.	1058-1062 HOWARD		C	
3726	24	LLOYD BLDG.	1064-1066 HOWARD		C	
3726	25	MATHAT BLDG.	1068-1070 HOWARD		C	
3726	26	MUELLER MFG. CO.	1072-1076 HOWARD		C	
3726	29		1084-1086 HOWARD		C	
3726	30		1088 HOWARD		C	
3726	32	ROTHESAY APTS.	195 SEVENTH ST.		C	
3726	35		169 SEVENTH ST.		C	
3726	47		537-541 NATOMA		C	
3726	76	GRIFFEN BLDG.	576 NATOMA		C	
3726	105	GRAND SOUTHERN HOTEL	101-109 SEVENTH ST.		C	
3726	106	LURIE & HEMPHILL BLD	1087-1089 MISSION		C	
3726	107	COLEMAN BLDG.	1083-1085 MISSION		C	
3726	108		1077-1081 MISSION		C	
3726	110	NUELAN GARAGE	1023 MISSION		C	
3726	111		1019 MISSION		C	
3726	112		100 SIXTH ST.		B	
3727	1	HOTEL GORDON/BUDGET	100-120 SEVENTH ST.		C	
3727	4		150-154 SEVENTH ST.		C	
3727	5		160 SEVENTH ST.		C	
3727	8	CARLSON BLDG.	1108-1110 HOWARD		C	
3727	10	STERSHER BLDG.	1114 HOWARD		C	
3727	12	JOHNSON BLDG.	1122 HOWARD		C	
3727	14		1126 HOWARD		B	
3727	16		1136-1140 HOWARD		C	
3727	18	HARMS BLDG.	1142 HOWARD		C	
3727	22	WAKELEE'S PHARM.WHSE	1150-1158 HOWARD		C	
3727	24	DANNEMARK BLDG.	1160-1162 HOWARD		C	
3727	26	BOTHIN REAL ESTATE	1166-1198 HOWARD		C	
3727	48		626-628 NATOMA		C	
3727	61	GEORGE H. TAY CO.	165 EIGHTH ST.		C	
3727	63		143-147 EIGHTH ST.		C	
3727	65		683 MINNA		C	
3727	72	SHULER FLATS	653-655 MINNA		C	
3727	77	F.L. HANSEN BLDG.	637 MINNA		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3727	78		635 MINNA		C	
3727	91	HESS GARAGE	1125-1127 MISSION		C	
3727	94	LURIE CO. BLDG.	1131 MISSION		C	
3727	96	KNIGHTS OF THE RED B	1133-1137 MISSION		C	
3727	101	DR.C.BAUER BLDG.	1151-1153 MISSION		C	
3727	102	MCLAUGHLIN EST. CO.	1155-1159 MISSION		C	
3727	103	UNITED HOLDING CO.	1161-1163 MISSION		C	
3727	113	P.M.HARE & SONS APTS	135-139 EIGHTH ST.		C	
3727	118	GOETZ BLDG.	1183-1185 MISSION		C	
3727	120	GODEAU BLDG.	1167-1169 MISSION		C	
3727	125		1145-1149 MISSION		C	
3727	130	GREYHOUND PACKAGE EX	1119-1121		C	
3727	135	PG&E SUBSTATION 1	111-117 EIGHTH ST.		C	
3728	2	BUZZEL BLDG.	120-132 EIGHTH ST.		B	
3728	5	MYERS BLDG.	150-154 EIGHTH ST.		C	
3728	8		1202-1204 HOWARD		C	
3728	11		1220 HOWARD		C	
3728	14	GUILDOY CORNICE WKS.	1234 HOWARD		B	
3728	17	R.H.J.FORBES BLDG.	1246 HOWARD		C	
3728	18	WALTER C.FALCH BLDG.	1252-1256 HOWARD		C	
3728	26	HANSEN BLDG.	757-759 NATOMA		C	
3728	29		741 NATOMA		C	
3728	32		727-731 NATOMA		C	
3728	35	REICHEL ENG. CO.	718-720 NATOMA		C	
3728	38		732-734 NATOMA		C	
3728	39		736-738 NATOMA		C	
3728	45	SPRINGER FLATS	770 NATOMA		C	
3728	48		145 NINTH ST.		B	
3728	49		145 NINTH ST.		C	
3728	53		761-763 MINNA		C	
3728	54		757-759		C	
3728	55		753-755 MINNA		C	
3728	56	JULIA DUNN RESIDENCE	747-751 MINNA		C	
3728	57		743-745 MINNA		C	
3728	60		727-731 MINNA		C	
3728	61		723-725 MINNA		C	
3728	69	J.C.CORP. BLDG.	121-131 NINTH ST.		C	
3728	75		1271-1275 MISSION		C	
3728	76	HERMAN R. KLENCK BLD	1263-1267 MISSION		C	
3728	89		1235 MISSION		A	<G>
3729	2	GOLDEN STATE BAKING	1207-1223 HOWARD		C	
3729	5	DR.F.C.KECK BLDG.	246-260 EIGHTH ST.		C	
3729	42		716-718 CLEMENTINA		C	
3729	45		730-732 CLEMENTINA		C	
3729	46		736 CLEMENTINA		C	
3729	53A	MURPHY FLATS	770-772 CLEMENTINA		C	
3729	53		766-768 CLEMENTINA		C	
3729	55		782-784 CLEMENTINA		C	
3729	56	WAREHOUSE UNION	255-261 NINTH ST.		C	
3729	57	LACEY/NORMANDY HOTEL	249-251 NINTH ST.		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 4

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3729	58	CLOISTER PRESS	235-239 NINTH ST.		C	
3729	59	MCLENEGAN BLDG.	231-235 NINTH ST.		C	
3729	65		737-739 TEHAMA		C	
3729	67		725 TEHAMA		C	
3729	72		720-750 TEHAMA		C	
3729	78	MRS MATTIE BOYD APTS	227-229 NINTH ST.		C	
3729	79		223-225 NINTH ST.		C	
3729	80		219-221 NINTH ST.		C	
3729	81	GIACOBBI & SONS BLDG	207-211 NINTH ST.		C	
3729	82	PHILLIPS HOTEL	201 NINTH ST.		B	
3729	83		1283-1287 HOWARD		C	
3729	86		1245-1261 HOWARD		C	
3729	87		1237-1239 HOWARD		C	
3729	88	WHELAN FRENCH BAKERY	1233-1235 HOWARD		C	
3729	90		761 TEHAMA		C	
3730	3	DANNER PUBLISHING CO	224 SEVENTH ST.		C	
3730	4	H.E.& F.W. HOLMES	230-234 SEVENTH ST.		C	
3730	8	MYERS BLDG.	268-270 SEVENTH ST.		C	
3730	10		282-284 SEVENTH ST.		C	
3730	32	CA PRINTING CO.	255-268 EIGHTH ST.		C	
3730	34		243-245 EIGHTH ST.		C	
3730	38	SNYDER BROS.KNT'G ML	201 EIGHTH ST.		C	
3730	39		1181-1185		C	
3730	40	SCHALLA BLDG.	1159-1169 HOWARD		C	
3730	59	SAMUEL SCHELL BLDG.	1173-1175 HOWARD		C	
3730	60		1159 HOWARD		C	
3730	61	COLEMAN APARTMENTS	1155 HOWARD		C	<G>
3730	70		60 RAUSCH		C	
3730	72		64 RAUSCH		C	
3730	82	AUSTIN DRAYING CO.	45 RAUSCH		C	
3730	88	HOELSCHER & ROSENBLM	1145-1149 HOWARD		C	
3730	89	PALADINI BLDG.	1141 HOWARD		C	
3730	100		52-56 LANGTON		C	
3730	101		58-62 LANGTON		C	
3730	102		64-70 LANGTON		C	
3730	104	PACIFIC MILLING CO.	74-84 LANGTON		C	
3730	108		73-77 LANGTON		C	
3730	117	CALIF. WOOD CARVING	1117 HOWARD		C	
3731	31	MYERS BLDG.	273-285 SEVENTH ST.		C	
3731	40	JOHNSON BLDG.	225 SEVENTH ST.		C	
3731	41		219-221 SEVENTH ST.		C	
3731	42	BLINDCRAFT BLDG.	1097 HOWARD		B	
3731	43	C.A.B. EMANUEL LDG.	1078-1080 HOWARD		C	
3731	55		76 MOSS		C	
3731	71	ROSENBLUM & H. BLDG.	1069-1073 HOWARD		C	
3731	72		1061-1063 HOWARD		C	
3731	73		1055-1059 HOWARD		C	
3731	74		1049 HOWARD		B	
3731	76		112-114 RUSS ST.		C	
3731	77		120-126 RUSS		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3731	78	HJUL BLDG.	128-130 RUSS		C	
3731	79		132-134 RUSS		C	
3731	82	J.ROACH APTS.	146-150 RUSS		C	
3731	83	CONNER BLDG.	152-156 RUSS		C	
3731	84	HJUL BLDG.	160-164 RUSS		C	
3731	86	ETHEL ELVIN BLDG.	170 RUSS		C	
3731	88	SOCKDOV APTS.	179-181 APTS.		C	
3731	89	NISHKIAN BLDG.	169-175 RUSS		C	
3731	91	MARKS BLDG.	159-165 RUSS		C	
3731	93	EMANUEL APTS.	151-153 RUSS		C	
3731	94		1035 HOWARD		B	
3731	99		34-40 HARRIET		C	
3731	104	EMANUEL FLATS	58-60 HARRIET		C	
3731	105		62-64 HARRIET		C	
3731	109		80-82 HARRIET		C	
3731	110		84-88 HARRIET		C	
3731	124	STERNSHER BLDG.	90 MOSS		C	
3732	8		252-260 FIFTH ST.		C	
3732	62	BEMISS WAREHOUSE	436-438 CLEMENTINA		C	
3732	64	HOGBERG BLDG.	444 CLEMENTINA		C	
3732	66	CASHEL BLDG.	450 CLEMENTINA		C	
3732	71	LAWSON & DRUCKER	465 TEHAMA		C	
3732	78	HOTEL ANGLO	237-245 SIXTH ST.		C	
3732	79		485-487 TEHAMA		C	
3732	80	NASON BLDG.	481-483 TEHAMA		C	
3732	81	W.H.RADBRUCH ENAMEL	479 TEHAMA		C	
3732	84		473 TEHAMA		C	
3732	88		451-453 TEHAMA		C	
3732	89		445-449 TEHAMA		C	
3732	90		443 TEHHAMA		C	
3732	90	SILVERSTONE FLATS	439-441 TEHAMA		C	
3732	91	HOGAN APTS.	435-437 TEHAMA		C	
3732	94	MEYERS SAFETY SWITCH	419 TEHAMA		C	
3732	96		415-417 TEHAMA		C	
3732	97	GUILLAUME CAZARES FL	409-413 TEHAMA		C	
3732	100	SULLIVAN BLDG.	921-923 HOWARD		C	
3732	102		422 TEHAMA		C	
3732	103	PINKERTON CO. BLDG.	927-931 HOWARD		C	
3732	108		442 TEHAMA		C	
3732	110	LOUIE LURIE BLDG.	951-957 HOWARD		C	
3732	112		965 HOWARD		C	
3732	114		971 HOWARD		C	
3732	116		971 HOWARD		C	
3732	123	HOTEL STAR/ROYAL HTL	219-221 SIXTH ST.		C	
3732	124	ORLANDO HOTEL	201 SIXTH ST.		B	
3732	127	SCHIFF BLDG.	985-987 HOWARD		C	
3732	129	KNOWLES BLDG.	977 HOWARD		C	
3732	130	E. A. BOZIO BLDG.	973-975 HOWARD		C	
3732	138	STELLING BLDG.	939-941 HOWARD		C	
3732	139		937 HOWARD		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 6

SUBAREA 3 (C-R-S DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3732	140		933-935 HOWARD		C	
3732	143	WHITE BLDG.	925 HOWARD		C	
3732	145	HOWARD REALTY CO.	911-917 HOWARD		C	
3733	58	FIELD-ERNST ENVELOPE	245 FIFTH ST.		B	
3733	60A		355 TEHAMA		C	
3733	60	SPAULDING P.C.B.WKS.	357-361 TEHAMA		C	
3733	79	P.G.&E. GARAGE	875-899 HOWARD		C	
3733	80	PAHL BLDG.	855-859 HOWARD		C	
3733	81		849-853 HOWARD		C	
3733	82	SOLOMON BLDG.	843-847 HOWARD		C	
3733	83	SULLIVAN BLDG.	839-841 HOWARD		C	
3733	84	HOME TELEPHONE CO.	835-837 HOWARD		A	
3733	88	MACGRUER & SIMPSON	819-823 HOWARD		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE

SUBAREA 4 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
811	16	S.F.ART COMM GALLERY	155 GROVE		C	
814	8	ARBURUA & MCINNIS	26-36 FELL ST.		C	
814	10	VIAVI BLDG.	42 FELL		B	
814	19	CLYDE PAYNE APTS.	55 POLK		C	
834	3	GODEAU UNDERTAKERS	41 VAN NESS		B	
834	4	MASONIC TEMPLE	11-35 VAN NESS		A	<G>
834	5	INTERNATIONAL CTR.	50 OAK STREET		A	<G>
834	7	YOUNG MEN'S INST	70 OAK		C	
834	12	WHITESIDE APTS.	150 FRANKLIN		B	
834	13	OAK HOTEL	171 FELL		C	
834	14	S.A.WEINSTOCK BLDG.	165-167 FELL		C	
834	15	GINGG & BALCOME BLDG	159-163 FELL		C	
834	18	ST. CECIL HOTEL	145 FELL		C	
835	2	MCGOVERN BLDG.	1440-1444 MARKET		C	
836	6		1548-1550 MARKET		C	
836	7	SULLIVAN GARAGE	55 OAK		C	
836	9		1576 MARKET		C	
836	10	MIRAMAR APTS.	1582 MARKET		B	
836	12	LEVENTRITT GARAGE	24-30 FRANKLIN		C	
3506	2	COCA COLA PLANT	1500 MISSION		B	<G>
3506	4	BOAS PONTIAC & HONDA	10-50 SOUTH VAN NESS		C	
3507	5,6		24-70 TENTH ST.		C	
3508	1	WESTERN FURN. EXCH.	1301-1355 MARKET		B	<G>
3508	13		1340 MISSION		C	
3508	18	NEW CLAREMONT HOUSE	80-98 NINTH ST.		C	
3508	20	SCANLON LNDY/DONS	1320-1328 MISSION		C	
3508	22	J.H.HJUL BLDG.	1336-1338 MISSION		C	
3508	24		1360 MISSION		C	
3508	25		1366-1370 MISSION		C	

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 1

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
282	4A	SUTTER/TAYLOR APTS.	701 TAYLOR		C	
283	4A	YWCA	620 SUTTER		B	<G>
283	4		600-608 SUTTER		C	<E>
283	22	METROPOLITAN CLUB	640 SUTTER		A	<G>
284	4	PHYSICIAN'S BLDG.	500 SUTTER		A	<G>
284	6	CARTWRIGHT HOTEL	524 SUTTER		C	
284	7	7TH CHURCH CHR. SCI.	532 SUTTER		B	<G>
284	8		540 SUTTER		B	<G>
284	9		550-556 SUTTER		C	
284	10	HOTEL REGENT	562 SUTTER		B	<G>
284	11		578-580 SUTTER		C	
284	12		602 MASON		B	<G>
285	6	MEDICAL/DENTAL BLDG.	450 SUTTER		A	<G>
285	9	ACADAMY OF ART COLL.	540 POWELL		B	<G>
285	10	CHESTERFIELD APTS.	560 POWELL		B	<G>
285	14	ANGELUS APTS.	645 BUSH		B	
285	16	CROWLEY APTS.	635 BUSH		B	
285	18	MATABELLE APTS.	625 BUSH		C	
295	8	SIR FRANCIS DRAKE H.	450 POWELL		A	<G>
295	10	OLD P.G.& E.	445-447 SUTTER		A	<G>
296	1		449 POWELL		B	<G>
296	2		445-447 POWELL		C	
296	5	CHANCELLOR	443 POWELL		B	<G>
296	8	CHAMBERLAIN BLDG.	442 POST		B	<G>
296	9	ELKS CLUB	450 POST		A	<G>
296	10	MEDICO-DENTAL BLDG.	490 POST		B	<G>
296	12A	ST. FRANCIS APTS.	542 MASON		C	
296	12B	FRANCISCA CLUB	595 SUTTER		B	<G>
296	13		575 SUTTER		C	
296	14		439 POWELL		C	
297	1	MARINE'S MEMORIAL	609 SUTTER		B	<G>
297	5	OLYMPIC CLUB	524 POST		A	<G>
297	7	BOHEMIAN CLUB	624 TAYLOR		A	<G>
297	9		693 SUTTER		C	
297	10		679-693 SUTTER		C	
297	12		655 SUTTER		C	
297	13	HOTEL BERESFORD	635 SUTTER		C	
297	14	ACADEMY OF ARTS	627 POWELL		B	<G>
298	1	SUSSEX HOUSE	701 SUTTER		C	
298	2	HAWTHORNE APTS.	627 TAYLOR		C	
298	3	EISENBERG APTS.	625 TAYLOR		C	
298	4	J.WINTERBURN HOTEL	621 TAYLOR		C	
298	5	TAYLOR HOTEL	615 TAYLOR		C	
298	6	ALVARADO HOTEL	600 POST		B	
298	7	J.J.MOORE APTS.	620 POST		C	
298	8		624 POST		C	
298	33	H.B.JOHNSON BLDG.	721-737 SUTTER		C	
298	34	HOTEL GLENWOOD	717 SUTTER		C	
305	1	M.A.HUNT APTS.	551-555 TAYLOR		C	
305	2	THE ADELAIDE INN	5 ADELAIDE		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
305	3		533 TAYLOR		C	
305	6	GEARY/TAYLOR HOTEL	533 TAYLOR		B	
305	7	ST.FRANCIS ARMS	516-528 GEARY		C	
305	29	HOTEL WORTH	639 POST		B	
305	32	SHELDON HOTEL	625-633 POST		C	
305	33	GAY APTS.	617-619 POST		C	
305	34	MARY PRIEST HOTEL	611-615 POST		C	
306	2	WATER DEPT. BLDG.	425 MASON		B	<G>
306	4		400-414 GEARY		C	
306	6	PAISLEY HOTEL	418-432 GEARY		C	
306	7A	GEARY BUILDING	450 GEARY		B	<G>
306	7B		458 GEARY		B	<G>
306	7	SOMERTON HOTEL	436-440 GEARY		C	
306	8		468 GEARY		C	
306	9	HOTEL DAVID	476-480 GEARY		C	
306	11		484-486 GEARY		C	
306	12	MARYLAND HOTEL	490-498 GEARY		C	
306	15	CLIFTON APTS.	518-520 TAYLOR		C	
306	16	POST/TAYLOR GARAGE	569 POST		C	
306	17		593-599 POST		C	
306	20		555 POST		B	<G>
306	22	HOTEL CECIL	545 POST		C	
307	6	ROSEBUDS ENGLISH PUB	366-374 GEARY		C	
307	7	HOTEL RAFAEL	386 GEARY		C	
307	8	NATIVE SONS BLDG.	414 MASON		A	<G>
307	9	1ST CONGREGATIONAL	491 POST		A	<G>
315	10	SPAULDING HOTEL	238-242 O'FARRELL		C	
315	17	KING GEORGE HOTEL	334 MASON		C	
315	20A		381 GEARY		C	
315	22	HOTEL STEWART	351 GEARY		B	<G>
315	26	LEFTY O'DOUL'S	333 GEARY		B	<G>
316	1	GEARY THEATER	415 GEARY ST.	X	A	
316	10	KBHK-TV	444 TAYLOR		B	<G>
316	13	CLIFT HOTEL	491 GEARY		B	<G>
316	18A	CURRAN THEATER	445 GEARY		A	<G>
316	18		459 GEARY		B	<G>
317	1	HOTEL BELLEVUE	501 GEARY		B	<G>
317	2	JUDSON WHEELER GAR.	415 TAYLOR		C	
317	3	HOTEL CALIFORNIAN	403 TAYLOR		B	
317	4	ALLEN APTS.	428-430 O'FARRELL		C	
317	5	EUREKA BENEVOLENT	434 O'FARRELL		B	
317	6	WILSON HOTEL	438 O'FARRELL		B	
317	27	MATTHEW LITTLE APTS.	531 GEARY		B	
323	6	MENDEL APTS.	415 JONES		B	
323	7	WINDELER APTS.	424 ELLIS		B	
324	1	COLUMBIA HOTEL	401 O'FARRELL		B	
324	2	DON/MARK TWAIN HOTEL	339-347 TAYLOR		C	
324	4B	GLIDE HOTEL & APTS.	322-332 ELLIS		C	
324	4A	GLIDE MEMORIAL	302 ELLIS		B	
324	6	GEO.HAAS REALTY APTS	344 ELLIS		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 3

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
324	9	SMITH & STEWART APTS	369 ELLIS		C	
324	10	HETTY APTS.	372-376 ELLIS		C	
324	12	RIVIERA HOTEL	420 JONES		C	
324	13	D.J.CLANCY APTS.	424 JONES		C	
324	14	ABBEY APTS.	450 JONES		C	
324	15	SULLIVAN BLDG.	485-489 O'FARRELL		C	
324	18	GAS CONSUMERS ASSN.	467 O'FARRELL		C	
324	20	WILCHAR APTS.	447-453 O'FARRELL		C	
324	21	HOTEL WINTON	433-445 O'FARRELL		C	
324	22	BROWNE HOTEL	415-421 O'FARRELL		C	
326	10	HOTEL RAMONA	172-174 ELLIS		C	
326	13	FRED FARISH BLDG.	279 O'FARRELL		C	
326	18	HOTEL BARCLAY	243 O'FARRELL		B	<G>
330	13	KOWALSKY APTS.	120 MASON		B	
330	14	OLYMPIC HOTEL	134-140 MCALLISTER		C	
330	23	CONTINENTAL HOTEL	119 ELLIS		B	<G>
331	1A	HAMAMM SULTAN BATHS	227-231 ELLIS		C	
331	1	FITEL PHILLIPS CO.	201-225 ELLIS		C	
331	3	WOODFIELD BLDG.	135-147 MASON		C	
331	6	HOTEL MASON	120 MASON		B	
331	7	TWOMBLY HOTEL	128-132 EDDY		C	
331	8	LANGHAM HOTEL	136-144 EDDY		C	
331	9	HOTEL CECIL	156 EDDY		B	
331	12	ELDON APTS.	240-248 TAYLORR		C	
331	13	PERKINS APTS.	250-262 TAYLOR		C	
331	16	FLOOD GARAGE	233 ELLIS		B	
332	2		225 TAYLOR		C	
332	3	HOTEL RITZ	200-216 EDDY		C	
332	4	HOTEL OLYMPIC	230-232 EDDY		C	
332	5	LACOSTE HOTEL	234-244 EDDY		C	
332	6	SHOENFIELD BLDG.	246-250 EDDY		C	
332	10	BEL-AIR HOTEL	342 JONES		B	
332	12	HOTEL MENTONE	387-97 ELLIS		B	
332	14	CORONADO HOTEL	373-377 ELLIS		C	
332	15	MCLAUGHLIN BLDG.	369 ELLIS		C	
332	16		355-365 ELLIS		C	
333	1	GASHWILER APTS.	401-421 ELLIS		C	
333	2	MRS.J.BALDWIN APTS.	345 JONES		C	
333	5		333 JONES		C	
333	6	HOTEL HERALD	302 EDDY		B	
333	7	O'BRIEN HOTEL	322-330 EDDY		C	
333	21	HOTEL ARTMAR	423-433 ELLIS		C	
336	2	A.B.HASBACHER HOTEL	225-229 HYDE		C	
336	4	WILSON APTS.	416-422 TURK		C	
336	5	MARYE BLDG.	440 TURK		C	
336	8	MEYER APTS.	500-514 LARKIN		C	
336	11	KINCANON & W. APTS.	528-532 LARKIN		C	
336	14	KINCANON & W. APTS.	550 LARKIN		C	
336	14A	SENTINEL HOTEL	587 EDDY		C	
336	14C	KINCANON & W. APTS.	556 LARKIN		C	

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE .

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT) .

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
336	14B	MAYFLOWER APTS.	575 EDDY		C	
336	15	DUSENBURY APTS.	555 EDDY		C	
336	16	MRS.J.GIBBS GARAGE	545 EDDY		C	
336	17	FILM EXCHANGE	245-259 HYDE		13*	<G>
336	18	" "			13*	
336	19	" "			B	
338	1A	PADRE HOTEL	235 JONES		B	
338	2	RAMACCIOTTI APTS.	219-233 JONES		C	
338	4	205 JONES APTS.	201-217 JONES		C	
338	5	DIXON HOTEL	218-220 TURK		C	
338	9	GRANADA GARAGE	256-266 TURK		C	
338	10	FASSIO APTS.	270-272 TURK		C	
338	13		200-220 LEAVENWORTH		C	
338	14	LAIOLO APTS.	222 LEAVENWORTH		C	
338	22		335-339 EDDY		C	
338	23		301-311 EDDY		C	
338	24	HOTEL VAN DORN	240-242 TURK		C	
339	2		131 TAYLOR		C	
339	3	HYLAND HOTEL	101-121 TAYLOR		C	
339	4	DENNING HOTEL	116-120 TURK		C	
339	5	PORTOLA HOTEL	124-126 TURK		C	
339	6	DIXON BLDG.	130-134 TURK		C	
339	7	ALICIA MCCONE BLDG.	136-140 TURK		C	
339	8	BOGART GARAGE	150 TURK		B	<G>
339	11A	HOTEL ANTONIA MANOR	180-194 TURK		C	
339	11	A.F.NIEDT APTS.	170-174 TURK		C	
339	13	MUSICIANS UNION	226 JONES		B	
339	14	HOTEL ROOSEVELT	240-256 JONES		C	
339	15A	HARRIMAN APTS.	245-253 EDDY		C	
339	15	METROPOLITAN GARAGE	265 EDDY		B	
339	16	HOTEL EDDY	233-237 EDDY		C	
340	1	AMBASSADOR HOTEL	35 MASON		B	
340	4	OXFORD HOTEL	16 TURK		B	<G>
340	7	DALT HOTEL	34 TURK		B	
340	8	ZELLERBACH HOTEL	50-52 TURK		C	
340	9	ARANDA HOTEL	62 TURK		B	
340	10	HOTEL TAYLOR/DAHLIA	66-74 TURK		C	
340	11	ALLEN BLDG.	76-80 TURK		C	
340	12	HOTEL WARFIELD	108-120		C	
340	14		136 TAYLOR		B	
340	15	MODERNE HOTEL	144-164 TAYLOR		C	
340	16	ROSENBAUM EST. BLDG.	161-181 EDDY		C	
340	18	G.& A.HARSHALL HOTEL	141-145 EDDY		C	
342	1	DEAN BUILDING	950-964 MARKET		C	
342	2		966-970 MARKET		C	
342	4		972 MARKET		C	
342	7	WARFIELD THEATER	982 MARKET		A	<G>
342	13	CREST THEATER	980 MARKET		B	<G>
343	1	THE GRAND HOTEL	101 TURK		C	
343	2	GOLDEN GATE THEATER	1 TAYLOR		A	<G>

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 5

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
343	8	RIVERSIDE APTS.	50 GOLDEN GATE		B	<G>
343	9	AUTO SERVICE GARAGE	65-82 GOLDEN GATE		C	
343	10	MYERS BLDG.	86-98 GOLDEN GATE		C	
343	12		124-130 JONES		C	
343	13	HOTEL LYRIC	132-148 JONES		C	
343	16	BELL GARAGE	175 TURK		B	
343	17A	MATTHEW BRADY APTS.	149-155 TURK		C	
343	17	HESS /EL CREST APTS.	161-165 TURK		C	
343	18	MORTIMER SAMUEL BLDG	133-145 TURK		C	
344	3	SPERRY LAND CO.	134 GOLDEN GATE		B	
344	4	K.C.BLDG.	150 GOLDEN GATE		A	
344	6A	BENNETT BLDG.	146-150 LEAVENWORTH		C	
344	6	LURIE FILM EXCHANGE	134-144 LEAVENWORTH		C	
344	6B	PADRE APTS.	281 TURK ST.		B	
344	7	KING EDWARD APTS.	275 TURK		C	
344	8	INVESTMENT PROP GAR.	225-265 TURK		B	
345	1	PAGE HOTEL	151-169 LEAVENWORTH		C	
345	4	YMCA	200 GOLDEN GATE		B	
345	8	HOTEL EARLE	276-284 GOLDEN GATE		C	
345	9	BALBOA HOTEL	100-120 HYDE		C	
345	10	LURIE BLDG.	122-132 HYDE		C	
345	12	CRAEMER APTS.	138 HYDE		C	
345	12B	G.MARTIN APTS.	369-371 TURK		C	
345	12C	KIPLING APARTMENTS	381 TURK		B	<G>
345	13	YMCA HOTEL	351 TURK		B	<G>
345	15	LOUIS LURIE BLDG.	321-333 TURK		C	
345	16	MRS.G.METCALFE APTS	309-315 TURK		C	
346	1	H.C.KENNAN APTS.	147 HYDE		B	
346	2		135-145 HYDE		C	
346	3		129 HYDE		C	
346	3B	RULF'S FILM EXCHANGE	125 HYDE		B	<G>
346	4		332-348 GOLDEN GATE		C	
346	6	HAMPTON COURT APTS.	366-398 GOLDEN GATE		B	
346	7	CAMPBELL APTS.	434 LARKIN		C	
346	10		452-460 LARKIN		C	
346	11	KAUFMAN APTS.	475-479 TURK		C	
346	13	HOTEL SENATE	463-471 TURK		C	
346	15	HOTEL WARREN/VINCENT	445-449 TURK		C	
346	16		431-437 TURK		C	
347	5	GLENBURN HOTEL	246 MCALLISTER		C	
347	6A	RAMONA APTS.	260 MCALLISTER		C	
347	6	J. GREENBACK APTS.	250 MCALLISTER		C	
347	7	THE MADONA HOTEL	268-272 MCALLISTER		C	
347	9	HERSKO APTS.	324 LARKIN		C	
347	12	JACOBS BLDG.	361-365 GOLDEN GATE		C	
348	6	TEMPLE METHODIST CH.	100-120 MCALLISTER		A	
348	7	ARGYLE HOTEL APTS.	132 MCALLISTER		B	
348	17	KGO TV	255 GOLDEN GATE		B	
348	23	COFFIN BLDG.	247 GOLDEN GATE		C	
348	24		241-243 GOLDEN GATE		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 4

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
348	26	LOUIE LURIE BLDG.	201-229 GOLDEN GATE		C	
349	1		101-127 GOLDEN GATE		C	
349	2	HOTEL BOYD	39 JONES		B	
349	3	HIBERNIA BANK	1 JONES	X	A	<G>
349	4	SALVATION ARMY HOTEL	36-44 MCALLISTER		C	
349	8		60 LEAVENWORTH		C	
349	10A		177-191 GOLDEN GATE		C	
349	12	ST. BONIFACE CHURCH	155 GOLDEN GATE		A	<G>
350	1	SAN CHRISTINA BLDG.	1000 MARKET		B	<G>
350	2	BIJOU THEATER	1028-1056 MARKET		C	
350	4	ANGLO-CALIF. TRUST	1072 MARKET		B	<G>
351	1	HOTEL SHAW	1112 MARKET		B	<G>
351	32	METHODIST BOOK CONC.	83 MCALLISTER		A	<G>
351	33		77-79 MCALLISTER		C	
355	3	SCHWEITZER CIVIV A.	1212 MARKET		C	
355	4	BUCKLEY BLDG.	1220-1224 MARKET		C	
355	5	HOPE REALTY BLDG.	1232-1236 MARKET		C	
355	6	MOCKER BLDG.	1240-1242		C	
355	7		1244 -1254 MARKET		C	
355	8		1256-1266 MARKET		C	
355	9	HOTEL AVALON	1272-1276 MARKET		C	
355	10	MUIRHEAD HOTEL	1278-1298 MARKET		C	
355	15		1200 MARKET		B	
3701	5		38 EIGHTH ST.		C	<B>
3701	10	LEMCKE BLDG.	30 LASKIE ST.		C	
3701	11	LEMCKE BLDG.	36-38 LASKIE		C	
3701	22	HOTEL POTTER	1284-1288 MISSION		C	
3701	23	BLACKSTONE APTS.	77-83 NINTH ST.		C	
3701	59		745 STEVENSON		C	
3701	59	SAN FRANCISCAN HOTEL	1215 MARKET		A	
3702	1	100F HALL	26 SEVENTH ST.		A	<G>
3702	2		30-34 SEVENTH ST.		C	
3702	15	HOTEL ODEON	36-52 SEVENTH ST.		C	
3702	16	HOTEL ST. RAPHAEL	54-64 SEVENTH ST.		C	
3702	32	GREYHND.PKGE.EXPRESS	1110-1118 MISSION		C	
3702	39	ENTERPRISE ELEC. WKS	1164 MISSION		C	
3702	46	STRAND THEATER	1127 MARKET		C	
3702	47	EMBASSY THEATER	1125 MARKET		B	<G>
3702	48		1115-1117 MARKET		C	
3703	1	DEIGER BLDG.	1001-1005 MARKET		C	
3703	2	HOTEL WINSOR	20 SIXTH ST.		C	
3703	3	CURTIN BLDG.	26-28 SIXTH ST.		C	
3703	4	SENECA HOTEL	32 SIXTH ST.		B	
3703	5	HOTEL KING	42-46 SIXTH ST.		C	
3703	6	BARUCH & CO. HOTEL	48-62 SIXTH ST.		C	
3703	10		532-536 JESSIE		C	
3703	12	E.OUTFITTING CO.	527 STEVENSON		C	
3703	25		531-537 JESSIE		C	
3703	27	HOTEL LLOYD	64-68 SIXTH ST.		C	
3703	28	BALDWIN HOUSE HOTEL	70-76 SIXTH ST.		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 7

SUBAREA 5 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
3703	29	SULLIVAN ESTATE CO.	80-96 SIXTH ST.		C	
3703	33		1026 MISSION		C	
3703	41	MAIN POST OFFICE	95 SEVENTH ST.	X	A	
3703	50	WEINSTEIN CO.BLDG.	535 STEVENSON		C	
3703	58	STERLING BLDG.	1035-1049 MARKET		C	<A>
3703	59	GRANT BUILDING	1095 MARKET		A	<G>
3703	61	FEDERAL HOTEL	1083 MARKET		B	<G>
3703	63	EGYPTIAN THEATER	1069 MARKET		B	<G>
3703	64		1063 MARKET		C	
3703	65	E.D.E. BUILDING	1059 MARKET		A	<G>
3703	74		1025 MARKET		C	
3703	75		1023 MARKET		C	
3703	76	EASTERN OUTFITTING	1021 MARKET		A	<G>
3703	78		1007-1009 MARKET		C	
3703	81	KEAN HOTEL	1018-1024 MISSION		B	
3703	82		532 STEUART		C	
3704	2	HALE BROS. WAREHOUSE	34-36 FIFTH ST.		C	
3704	3	OAKWOOD HOTEL	40-48 FIFTH		C	
3704	11	OLD U.S.MINT	88 FIFTH ST.	X	A	
3704	12	REMEDIAL LOAN ASSN.	66 MINT ST.		B	
3704	13	HOTEL CHRONICLE	936-940 MISSION		C	
3704	15		942-946 MISSION		C	
3704	17	DIERKS LODGING HOUSE	948-952 MISSION		C	
3704	18	PIERCE BLDG.	954-960 MISSION		C	
3704	19	SMITH O'BRIEN BLDG.	966 MISSION		C	
3704	20	LYONS BLDG.	968 MISSION		C	
3704	21	SULLIVAN BLDG.	972-976 MISSION		C	
3704	22	SULLIVAN BLDG.	980-984 MISSION		C	
3704	24	ADAMS CO. BLDG.	986-988 MISSION		C	
3704	26	BARKER HOTEL	65-83 SIXTH ST.		C	
3704	28		471 JESSIE		C	
3704	29		431 JESSIE		C	
3704	34		54 MINT		B	
3704	35	WOBBER'S INC.	444 JESSIE		C	
3704	39	PG & E SUBSTATION T	465 STEVENSON		C	
3704	50	HILLSDALE HOTEL	47 SIXTH ST.		B	
3704	51	BALLIS HOTEL	43-45 SIXTH ST.		C	
3704	52	HOTEL MAZE	39-41 SIXTH ST.		C	
3704	53	MODEL HOTEL	35-37 SIXTH ST.		C	
3704	59		443-447 STEVENSON		C	
3704	68	HALE BROS DEPT STORE	979 MARKET		A	<G>
3704	69	WILSON BLDG.	973 MARKET		A	<G>
3704	71	EMPRESS THEATER	949 MARKET		B	<G>
3704	72	MORRISON'S	943 MARKET		B	<G>

APR 15 1983

TABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 1

SUBAREA 6 (C-3-R DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
285	5	MCCLOUD BLDG.	400-406 SUTTER		C	
286	3	HOTEL BALDWIN	507 BUSH		C	
286	4	ABRAHAMSON BLDG.	311 GRANT		A	<G>
286	5	GRANT AVENUE BLDG.	301 GRANT		B	<G>
286	6		310 SUTTER		B	<G>
286	7		312 SUTTER		B	<G>
287	9	ROSE BLDG. (SLOAN'S)	216 SUTTER		A	<CG>
287	10	SUTTER BUILDING	250 SUTTER		A	<G>
287	11	SATHER BUILDING	256 SUTTER		B	<G>
287	12	BEMISS BUILDING	266 SUTTER		A	<G>
293	5	BULLOCK & JONES	126 POST		A	<G>
293	6	JEWELERS BUILDING	150 POST		B	<G>
293	7		214 GRANT		A	<G>
293	9	WHITE HOUSE	255 SUTTER		A	<G>
294	1	HAMMERSMITH & CO.	301 SUTTER	X	A	<G>
294	2		255 GRANT		C	
294	3		251-253 GRANT		C	
294	5		233 GRANT		B	<G>
294	6		201 GRANT		A	<G>
294	7	GUGGENHEIM BLDG.	216-220 POST		C	
294	8	GUMPS/ELIZ. ARDEN	228-240 POST		C	
294	9	GUMP'S	250 POST		B	<G>
294	10	S. CHRISTIAN OF COP.	225 POST		C	
294	11		228 POST		B	<G>
294	12	VASILIS	44 CAMPTON PLACE		C	
294	13	HOTEL DRAKE-WILTSH.	340 STOCKTON		B	<G>
294	15	GALEN BUILDING	391 SUTTER		B	<G>
294	16	NATHALIE NICOLI BLDG	371-375 SUTTER		C	
294	17	FORBIDDEN CITY N. C.	355 SUTTER		B	<G>
294	19		345-353 SUTTER		C	
294	21	HOTEL ALANO	323-333 SUTTER		C	
294	22	NEWBEGIN BUILDING	315-317 SUTTER		C	
294	23	ORPHEUS	307-309 SUTTER		C	
295	5	BULLOCK & JONES	340 POST		B	<G>
296	6	ARGONAUT CLUB	421 POWELL		B	<G>
296	7		438 POST		B	<G>
307	1	ST. FRANCIS HOTEL	335 POWELL		A	<G>
308	1	UNION SQ. GARAGE	UNION SQUARE		B	
309	1	BROOKS BROS.	209 POST		A	<G>
309	3	GRANAT BROS.	100 GEARY		C	
309	4	MARION BUILDING	108 GEARY		B	<G>
309	5	E. SIMON	120 GEARY		B	<G>
309	6	SACH'S BUILDING	132 GEARY		B	<G>
309	7		146 GEARY		C	
309	8		152 GEARY		C	
309	9		156 GEARY		C	
309	10		177 MAIDEN LANE		C	
309	10	WHITTELL BLDG.	166 GEARY		A	<G>
309	11	COLSON BUILDING	200-212 STOCKTON		C	
309	13		216 STOCKTON		B	<G>

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 6 (C-3-R DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
309	14	A.M. ROBERTSON BLDG.	218 STOCKTON		B	<G>
309	19	V.C. MORRIS BLDG.	140 MAIDEN LANE	X		
309	20	SCHROTH BUILDING	234 STOCKTON		B	<G>
309	22	LATHROP BLDG.	275 POST		C	
309	23	OLD RANSOHOFF'S	259 POST		B	<CG>
309	27	S. CHRISTIAN	225 POST		B	<G>
310	8	ROSENSTOCK	28 GEARY		B	<G>
310	12	HOTEL GREYSTONE	66 GEARY		C	
310	13	CAILLEAU BLDG.	88 GEARY		C	
310	15	LIVINGSTON BROS.	100 GRANT		C	
310	16		166 GRANT		C	
310	17		140 GRANT		C	
310	19	(OLD) LIEBES BLDG.	175 POST		B	<G>
310	20	ROTHCHILD BUILDING	165 POST		C	<G>
310	24	ST. PAUL BOOK CTR.	46 GEARY		C	
312	6	WELLS FARGO	744 MARKET	X	A	<G>
312	8	(OLD) I.MAGNIN	50 GRANT		B	
312	9	BANKER'S INV. BLDG.	722 MARKET		B	<G>
313	1	PARAGON BUILDING	101-111 GEARY		C	
313	2		59 GRANT		C	
313	3	ELEANOR GREEN BLDG.	55 GRANT		B	<G>
313	4		45 GRANT		C	
313	5	FISHER BUILDING	39-41 GRANT		C	
313	7	ZOBEL	17 GRANT		B	<G>
313	8	SECURITY PACIFIC	1 GRANT	X	A	<G>
313	10	KOHLER & CHASE	20 O'FARRELL		B	<G>
313	16		125-129 GEARY		C	
314	1	I. MAGNIN	233 GEARY		33*	<G>
314	2	MACY'S	101 STOCKTON		B	<G>
314	6	ST. MORITZ HOTEL	180-190 O'FARRELL		C	
314	7	OMAR KHAYYAM'S	200 POWELL		A	<G>
314	8	LEW SERBIN CO.	222 POWELL		C	
314	9		226-230 POWELL		C	
314	10	HOTEL STRATFORD	236 POWELL		C	
314	11	LINCOLN BLDG.	293 GEARY		B	
314	12	ST. PAUL BUILDING	285-291 GEARY		C	
314	14	WERNER BUILDING	251-259 GEARY		C	
315	1	ELKAN GUNST BLDG.	301 GEARY		B	<G>
315	2		235-245 POWELL		C	
315	3	MANX HOTEL	201 POWELL		C	
315	4	HOWARD BUILDING	207-217 POWELL		C	
326	1	MARQUARD'S	201 O'FARRELL		B	<G>
326	2	HOTEL HERBERT	151-161 POWELL		C	
326	3		135 POWELL		B	<G>
326	4		111 POWELL		B	<G>
326	5	THE MRS. BUTLER BLDG	120 ELLIS		C	
327	1	IMPERIAL REALTY	65 STOCKTON		B	<G>
327	2		55-59 STOCKTON		C	
327	12	HOTEL GOLDEN STATE	100-118 POWELL		C	
327	13		120 POWELL		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 3

SUBAREA 6 (C-3-R DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
327	18	DOWNTOWN CNTR. BLDG.	165-167 O'FARRELL		C	
327	20		107 O'FARRELL		C	
327	22	ELEVATED SHOPS	14 POWELL		C	<G>
328	1	PHELAN BUILDING	760 MARKET	X	A	<G>
328	2	GRODIN'S	790 MARKET		C	
328	4	J. MAGNIN	77 O'FARRELL		B	<G>
329	1	WEST BANK BUILDING	800 MARKET		B	<G>
329	5	FLOOD BUILDING	870 MARKET	X	A	<G>
329	6	JOHN'S GRILL	61-65 ELLIS		C	
330	1	POWELL BLDG.	111 ELLIS		C	
330	2		45-49 POWELL		C	<G>
330	3	POWELL CINEMA	35-41 POWELL		C	
330	4	HOTEL POWELL	17 POWELL		B	<G>
330	5	BANK OF AMERICA	1 POWELL		A	<G>
341	6	MECHANIC'S SAVINGS	948 MARKET		B	<G>
341	7	RUBY HILL VINYARD CO	34 MASON		B	
341	8	HOTEL BRISTOL	48-98 MASON		C	
3704	1	J.C. PENNEY'S	5TH & MARKET (SW)		A	<G>
3704	74	NAT'L DOLLAR STORE	931-933 MARKET ST.		C	
3704	76		925 MARKET		C	
3704	77	TAYLORS	923 MARKET		C	
3705	1	PACIFIC BUILDING	821 MARKET		A	<G>
3705	4	KEYSTONE HOTEL	54-68 FOURTH ST.		B	
3705	5	WAGNER BLDG.	70-74 FOURTH ST.		C	
3705	7	S.F. BULLETIN	810 MISSION		B	
3705	8		816 MISSION		B	
3705	9	SWETT CO.BLDG.	820-822 MISSION		C	
3705	12	832 MISSION			C	
3705	13	BOYD INVESTMENT CO.	844-848 MISSION		C	
3705	15		862-864 MISSION		C	
3705	17	DELMAR HOTEL	870-878 MISSION		C	
3705	21	PICKWICK ANNEX	884-890 MISSION		C	
3705	21	PICKWICK HOTEL	67 FIFTH STREET		B	
3705	34	COSTIGAN BLDG.	308-310 JESSIE		C	
3705	37	COMMERCIAL BUILDING	825 MARKET		B	<G>
3705	38	EMPORIUM WAREHOUSE	364-376 JESSIE		C	
3705	39	HOTEL LANKERSHIM	53-63 FIFTH ST.		C	
3705	42	LINCOLN BUILDING	879 MARKET		B	<G>
3705	43	EMPORIUM	835 MARKET		A	<G>
3706	1	CENTRAL TOWER	703 MARKET		B	<G>
3706	14	ST. PATRICK'S RECT.	760 MISSION		C	
3706	28	APPAREL CTR. BLDG.	49 4TH STREET		B	<G>
3706	48	HUMBOLDT BANK	785 MARKET		A	<G>
3706	61	CARROL & TILTON BLDG	735 MARKET		B	<G>
3706	62	BANCROFT BUILDING	725 MARKET		B	<G>
3706	63	BLISS & FAIRWEATHER	721 MARKET		C	
3706	64	MORRIS PLAN CO.	715-719 MARKET		C	
3706	68	ST. PATRICK'S CHURCH	756 MISSION	X	A	
3706	70	JESSIE ST. SUBST'N	220 JESSIE	X	A	
3706	71	MERCANTILE BLDG.	700 MISSION		A	

APR 15 1983

ABLE E.3: RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 1

UBAREA 7 (C-3-G DOWNTOWN OFFICE DISTRICT)

LOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
209	2		800-804 GRANT		C	
209	3	ROSSIER BLDG.	808-814 GRANT		C	
209	4		824 GRANT		A	
209	6	GRAY BLDG.	848 GRANT		C	
209	7	HANG ON TONG CO.BLDG	850 GRANT		C	
209	8		854-864 GRANT		C	
209	9	CHINATOWN TELEPHONE	743 WASHINGTON		A	
209	10	ARATA HOTEL	737-739 WASHINGTON		C	
209	11	HENRY WILLIAR HOTEL	731-735 WASHINGTON		C	
209	12	WM. EHRENFFORT BLDG.	727-729 WASHINGTON		C	
209	13	F.W.DUN BLDG.	49-57 BRENHAM PLACE		C	
209	14	CHINESE C.CHURCH	21 BRENHAM PLACE		B	
209	15	WING SUN MORTUARY	17 BRENHAM PLACE		B	
209	16		15 BRENHAM PLACE		C	
210	1	SANG WO CO. BLDG.	857-867 GRANT		C	
210	3	SAM YAP BENEV. ASSN	831 GRANT		B	
210	4	ADAMS INVESTMENT CO.	815-829 GRANT		C	
210	5	SOO YUEN BENEV.ASSN	801 GRANT		A	
210	6	BO ON TONG	808 CLAY		B	
210	7		100-108 WAVERLY		C	
210	8	GEE FAMILY ASSN.	109 WAVERLY PLACE		B	
210	9		820 CLAY		B	
210	10		844-848 CLAY		C	
210	11	STOUPE BLDG.	852-854 CLAY		C	
210	12	LOOK TIN ELI HOTEL	858-870 CLAY		C	
210	13	PAULIST CHINESE CTR	900 STOCKTON		B	
210	14	ST.MARY'S CHINESE	930 STOCKTON		B	
210	15		31-37 SPOFFORD		C	
210	20	TAI FUNG WO & CO.	855-857 WASHINGTON		C	
210	21	CHINESE FREEMASON S.	39-49 SPOFFORD		C	
210	22	CHEW GON BLDG.	22 SPOFFORD		C	
210	23		32-34 SPOFFORD		C	
210	24	CHEE KUNG TONG	36-38 SPOFFORD		B	
210	25		40-50 SPOFFORD		C	
210	28		835-841 WASHINGTON		C	
210	31	WONG GOW BLDG.	143-147 WAVERLY		C	
210	32	Y. KEUNG BENEV.ASS'N	137-141 WAVERLY		C	
210	33	YEE FUNG TOWY FAMILY	131 WAVERLY		B	
210	34	SUE HING BENEV. ASSN	123 WAVERLY PLACE		A	
210	35	CHIN CHONG DONG BLDG	117 WAVERLY PLACE		B	
210	36	LEE FAMILY ASSN.	109 WAVERLY PLACE		A	
210	38	W.GARDNER LODG'G HSE	124-132 WAVERLY		C	
210	39	SHEW KAE ASS'N BLDG.	138-142 WAVERLY		C	
210	40	JENG SEN BUDDHISM/T.	146-150 WAVERLY		C	
210	43	CHIN YUE & CHAN YU	815-817 WASHINGTON		C	
210	44	SAM WO	813 WASHINGTON		C	
210	45		52-54 SPOFFORD		C	
210	46		151-155 WAVERLY		C	
211	1		933-949 STOCKTON		C	
211	2	PRESBYTERIAN CHURCH	925 STOCKTON		B	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 2

SUBAREA 7 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
211	3	HOP WO BENEV.SOCIETY	913 STOCKTON		B	
211	4		901-907 STOCKTON		C	
211	5		910-914 CLAY ST		C	
211	6		916-920 CLAY		C	
224	2	CHINESE SIX CO.	843 STOCKTON		A	
224	3	GINTJEE BLDG.	833-841 STOCKTON		C	
224	4	VICTORY HALL C.C.H.S	827 STOCKTON		B	
224	5	SCHRODER BLDG.	809-815 STOCKTON		C	
224	6	BROWN BLDG.	801-805 STOCKTON		C	
225	2	YING ON LABOR ASSN.	745 GRANT		A	
225	3		733-741 GRANT		C	
225	4	FLEURY BLDG.	723-729 GRANT		B	
225	5	ONG KO MET ASSN.	717 GRANT		B	
225	6		701 GRANT		B	
225	7		816 SACRAMENTO		C	
225	8	CHINESE BABTIST CH.	1 WAVERLY PL.		A	
225	13	LEWIS GASNER HOTEL	800-810 STOCKTON		C	
225	14		812-828 STOCKTON		C	<A>
225	16	KUO MING TANG BLDG.	830-848 STOCKTON		C	
225	17	S. SCHEYER BLDG.	850-868 STOCKTON		C	
225	19	J.BAUCHAU ESTATE CO.	857-865 CLAY		C	
225	20	W.E.LOWE BLDG.	843-853 CLAY		C	
225	21		839-841 CLAY		C	
225	22	ENG FAMILY ASSN.	53 WAVERLY PLACE		B	
225	23	NING YUNG BLDG.	41 WAVERLY PLACE		B	
225	24	WONG FAMILY ASSN.	37 WAVERLY PLACE		A	
225	25	CHINESE MASONIC T.	29 WAVERLY PL.		A	
225	28		16 WAVERLY		C	
225	29		18-20 WAVERLY		C	
225	30	TOM FAMILY ASSN BLDG	771-783 CLAY		C	
225	31	CHIN ASSOCIATION	811-815 CLAY		B	
226	1		649-657 KEARNY		C	
226	11	CHINESE CHMBR.OF C.	728 SACRAMENTO		A	
226	12	TOM KING TUCK APTS.	732-734 SARAMENTO		C	
226	13	FOOK CHONG HONG SOC.	736-738 SACRAMENTO		C	
226	14	YEONG WO ASSN.	746 SACRAMENTO		B	
226	17		770 SACRAMENTO		C	
226	18	HOTEL REPUBLIC	700 GRANT		B	
226	21	RIEDMAN BLDG.	777-781 COMMERCIAL		C	
226	23		761 COMMERCIAL		C	
226	24		751 COMMRCIAL		B	
226	25		731-749 COMMERCIAL		C	
226	28		706-712 COMMERCIAL		C	
226	29	MUSTO ESTATE BLDG.	723-727 CLAY		C	
226	30	CHAN BLDG.	728-732 COMMERCIAL		C	
226	31	YATES BLDG.	734-738 COMMERCIAL		C	
226	32	THOMPSON BLDG.	740-742 COMMERCIAL		C	
226	33		746 COMMERCIAL		B	
226	34	QUONG FOOK TONG ASSN	754-756 COMMERCIAL		C	
226	36	CHINESE CONSOLIDATED	764-770 COMMERCIAL		C	

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 4

SUBAREA 7 (C-3-G DOWNTOWN OFFICE DISTRICT)

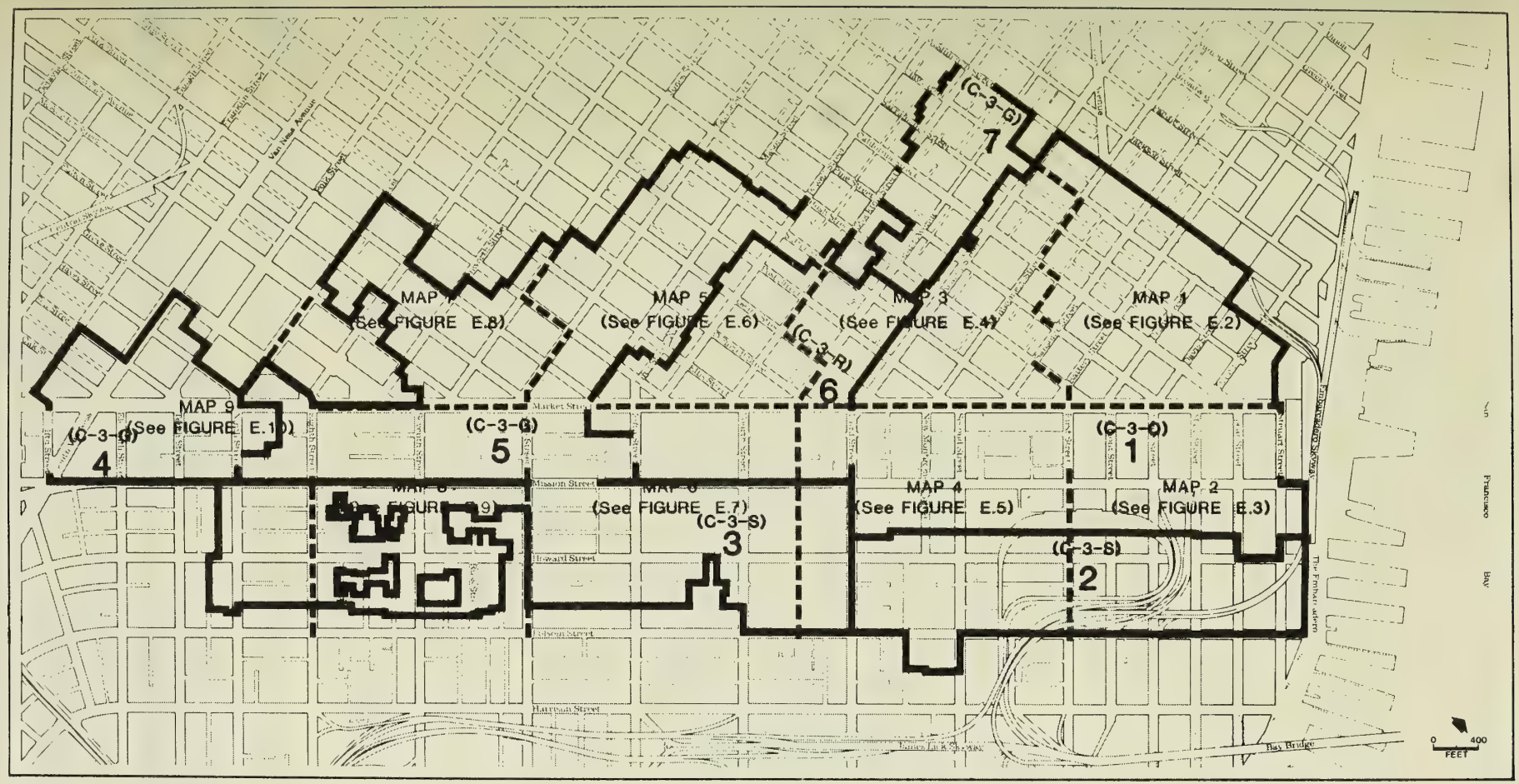
BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
258	16	HENRY FROHMAN BLDG.	528-532 GRANT		C	
258	17	SUGLIELMONI BLDG.	540-542 GRANT		C	
258	18		544-548 GRANT		C	
258	19	MARSICANO BLDG.	550-552 GRANT		C	
258	20	FRANKS & SWIFT BLDG.	558-560 GRANT		C	
258	21	CITY OF SHANGHAI	562-574 GRANT		C	
270	9	OLD FIREHOUSE	466 BUSH	X	A	<BG>
270	11	FRIEDMAN HOTEL	400 GRANT		A	
270	12	HERMAN HESKINS BLDG.	420 GRANT		C	
270	13	O'BRIEN BLDG.	428-430 GRANT		C	
270	14	R.J.O'BRIEN BLDG.	434-440 GRANT		C	
270	15	ROTH ESTATE BLDG.	444 GRANT		C	
270	16	KIM BLDG.	450 GRANT		B	
271	1	NEW SHANGHAI LOW	437-455 GRANT		B	
271	2	SHELBY BLDG.	433 GRANT		C	
271	3		425 GRANT		B	
271	4	FRANK & SWIFT BLDG.	417-419 GRANT		C	
271	5	ASTORIA HOTEL	502 BUSH		B	
271	11	NOTRE DAMES DES VIC.	2B CHATHAM PLACE		C	
271	12	NOTRE DAME VICTOIRE	564 BUSH		A	
271	13	MARIST FATHERS R.	566 BUSH		B	
271	27	GREAT WESTERN POWER	530 BUSH		B	
286	1	ST. CHARLES HOTEL	507 BUSH		C	
286	2	HOME TELEPHONE CO.	333 GRANT	X	A	<G>
286	22	TERBUSH BLDG.	515-519 BUSH		C	
287	17	BEVERLY PLAZA HOTEL	334-352 GRANT		C	
287	18	MFG. JEWELERS BLDG.	461-463 BUSH		C	
287	19	LE CENTRAL	453-455 BUSH		C	
287	20	HANSA HOTEL	447 BUSH		C	
287	25	TELEPHONE BLDG.	445 BUSH		A	<G>

APR 15 1983

TABLE E.3 : RECOGNIZED ARCHITECTURAL RESOURCES IN THE C-3 DISTRICT . PAGE 3

SUBAREA 7 (C-3-G DOWNTOWN OFFICE DISTRICT)

BLOCK	LOT	NAME (IF ANY)	ADDRESS	N&C	H	NOTES
226	37		772 COMMERCIAL		B	
226	38	LOWRY ESTATE BLDG.	730-734 GRANT		C	
226	39	CHINESE WORLD	736 GRANT		A	
226	40	STOELZLE BLDG.	742-756 GRANT		C	
226	41	HYMAN BROS. BLDG.	771-783 CLAY		C	
226	42	HIP SING TONG	757 CLAY		B	
226	43	FUN & SON BLDG.	753 CLAY		B	
226	44	M. HOE BLDG.	745-749 CLAY		C	
226	45	MOORE ESTATE BLDG.	735-739 CLAY		C	
226	46	CHARLES BACHMAN BLDG	729-733 CLAY		C	
226	47		713-721 CLAY		C	
226	48		775 COMMERCIAL		C	
226	49		764-768 SACRAMENTO		C	
241	12	OLD ST. MARY'S CH.	680 CALIFORNIA	X	A	
241	14	CARTER INVESTMENT CO	616-626 GRANT		C	
241	15		654 GRANT		B	
241	16		771-777 SACRAMENTO		C	
241	17	KONG CHOW SOCIETY	761-769 SACRAMENTO		C	
241	18	NAM KUE SCHOOL	755 SACRAMENTO		B	
241	19	HOY PING BEN. ASS'N.	729-731 SACRAMENTO		C	
242	1	FAT BLDG.	655 GRANT		B	
242	2	FAR EAST BAZAAR	631 GRANT		B	
242	3	J.H.LOEBER BLDG.	627-629 GRANT		C	
242	5	CALIF. PHYSICIANS	720 CALIFORNIA		C	
242	13	C.J. KEENAN APTS.	770 CALIFORNIA		C	
242	14	LEESMONT APTS.	790 CALIFORNIA		B	
242	16	VINCENT FASSIO APTS.	730 STOCKTON		C	
242	17		738 STOCKTON		C	
242	18	PELISSICO APTS.	750-752 STOCKTON		C	
242	20		891-897 SACRAMENTO		C	
242	22		4 BROOKLYN PLACE		C	
242	23	FONG BLDG.	10 BROOKLYN PLACE		C	
242	25		883 SACRAMENTO		C	
242	27	CHINESE YMCA	855 SACRAMENTO		A	
242	28	CHINESE HOTEL	819-831 SACRAMENTO		C	
242	29	CHINESE DAILY POST	809 SACRAMENTO		B	
242	30	CHIN PECK CO. APTS.	875 SACRAMENTO		C	
242	55	SING CHONG BLDG.	601 GRANT		A	
257	1	SING FAT CO.	555 GRANT		A	
257	2	A. CROCKER BLDG.	531-545 GRANT		C	
257	3	RUEF BLDG.	523-527 GRANT		C	
257	5	SAM ALTSCHULER BLDG.	519-521 GRANT		C	
257	7		20-24 VINTON CT.		C	
257	9	M.LACOSTE HOTEL	614 PINE		B	
257	11	HENCH APTS.	626 PINE		C	
257	12	COGSWELL COLLEGE	600 STOCKTON		A	<G>
258	12	NEAL BLDG.	500 GRANT		C	
258	13	TAI CHONG	506 GRANT		B	
258	14	MCKOWEN BLDG.	512-520 GRANT		C	
258	15	OLD SHANGHAI LOW	522 GRANT		C	



NOTE:

Existing Use Districts are shown in brown.

See Table III.1 for explanation of Use District symbols.

FIGURE E.1:
DESIGNATED ARCHITECTURAL RESOURCES REFERENCE MAP

SOURCE: Roger Owen Boyer and Associates



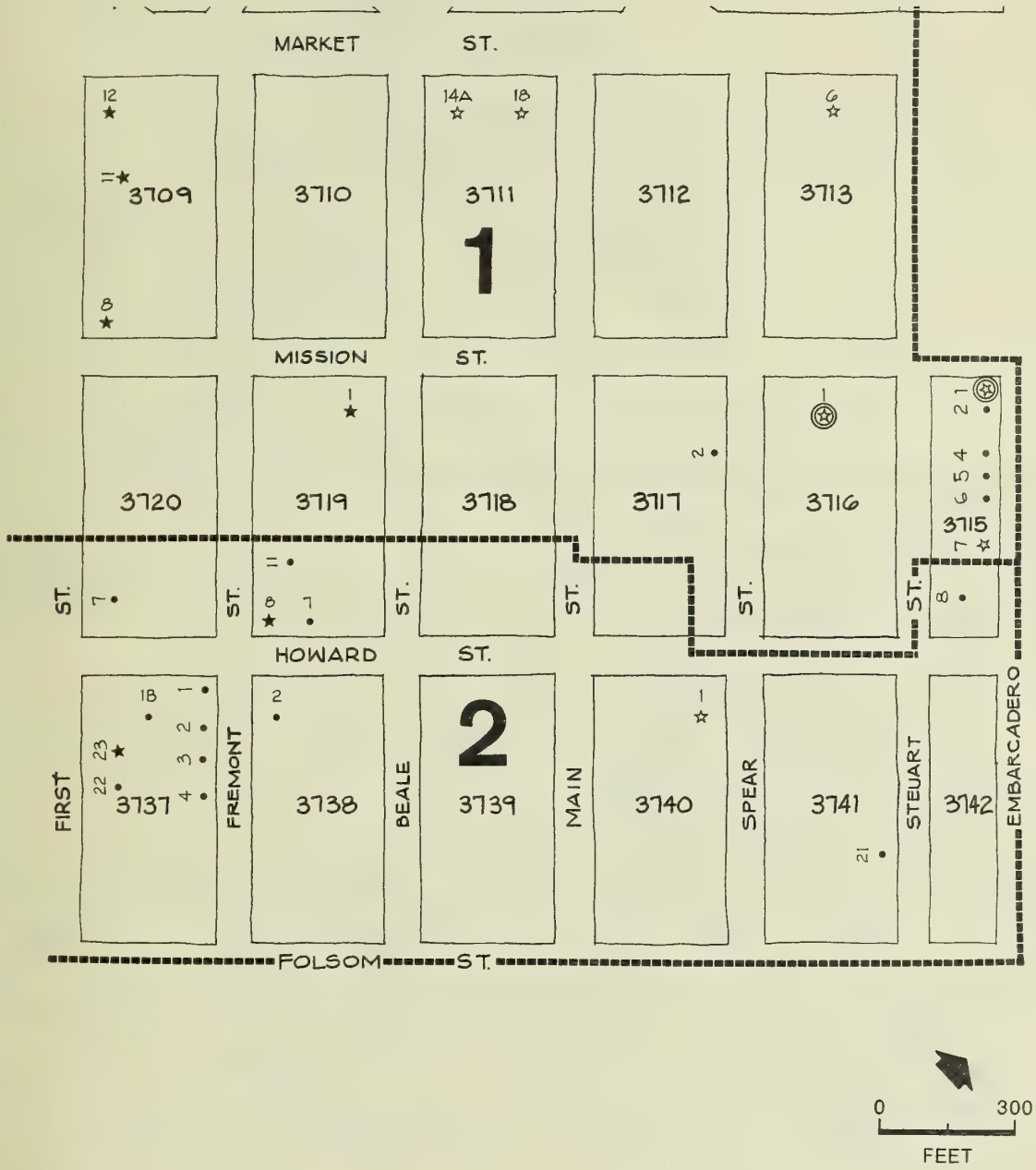
5	EIR Subarea
266	Block Number
129	Lot Number
☆	Heritage 'A'
★	Heritage 'B'
●	Heritage 'C'

◎	National Register of Historic Places
☆	City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.2:
DESIGNATED ARCHITECTURAL RESOURCES
MAP 1

SOURCE: Roger Owen Boyer and Associates



5 EIR Subarea
266 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
● Heritage 'C'

National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.3:
DESIGNATED ARCHITECTURAL RESOURCES MAP 2

SOURCE: Roger Owen Boyer and Associates



5 EIR Subarea
266 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
● Heritage 'C'

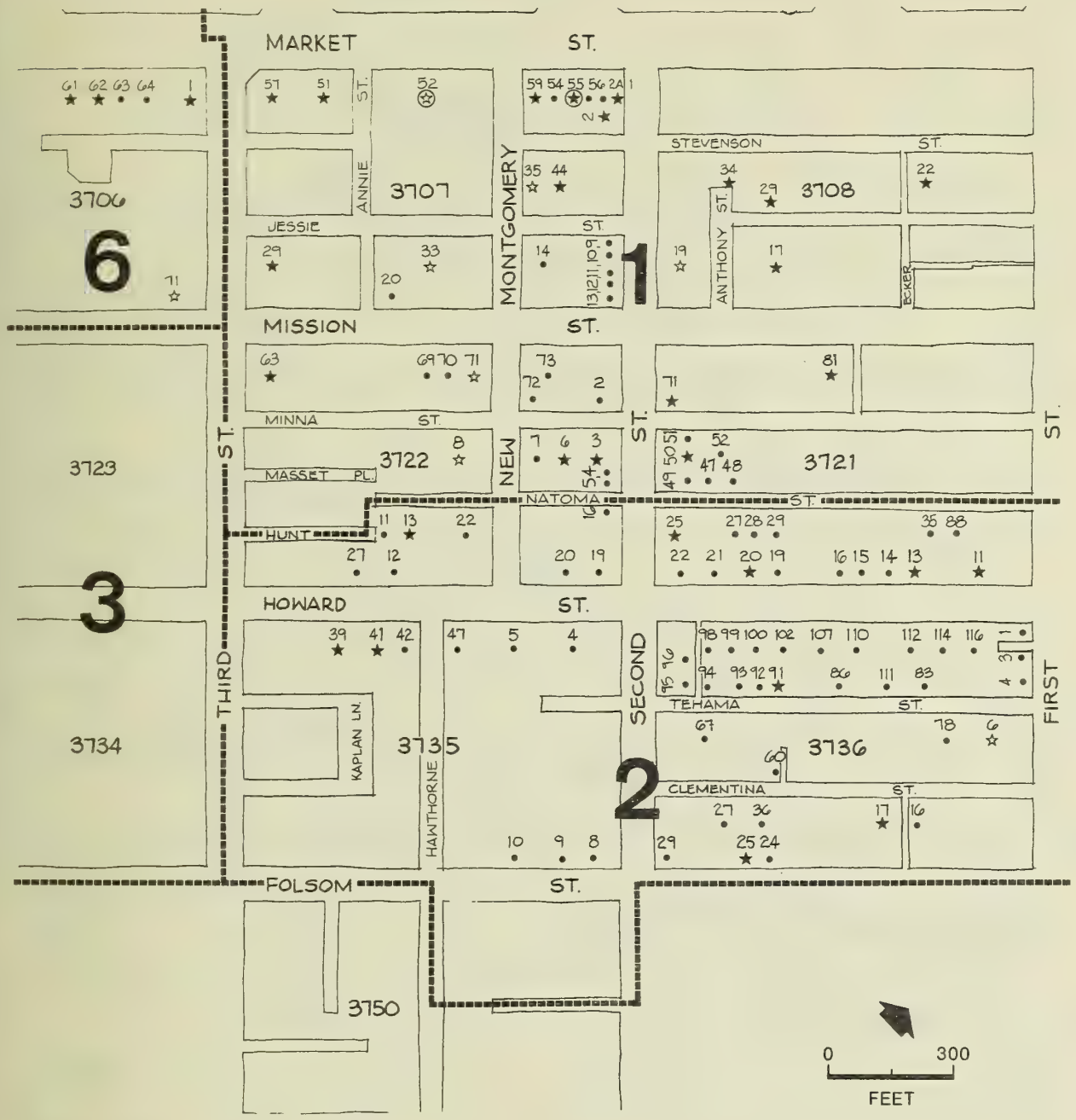
National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.4:
DESIGNATED ARCHITECTURAL RESOURCES MAP 3

SOURCE: Roger Owen Boyer and Associates



[5] EIR Subarea
268 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
• Heritage 'C'

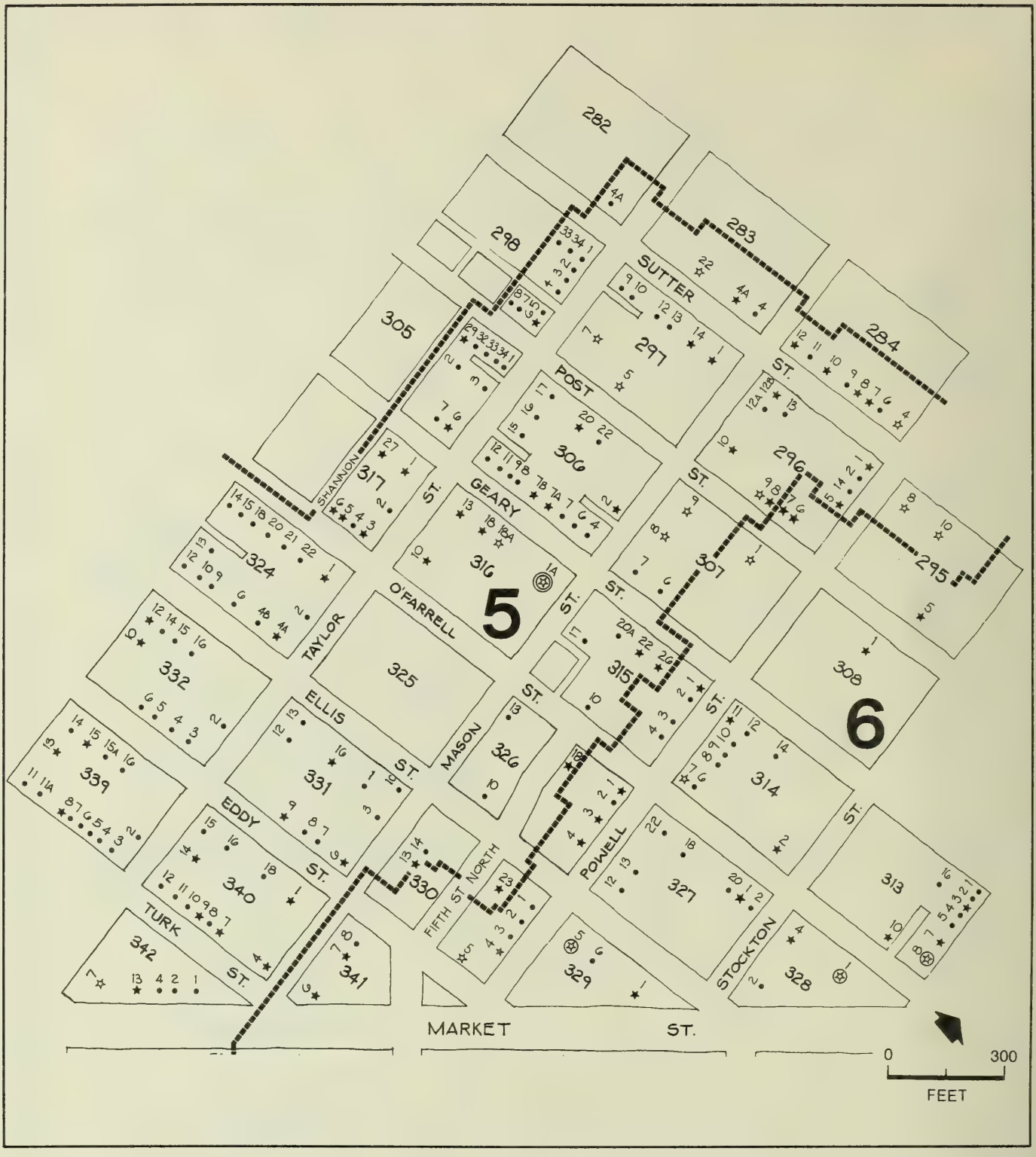
National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.5:
DESIGNATED ARCHITECTURAL RESOURCES MAP 4

SOURCE: Roger Owen Boyer and Associates



[5] EIR Subarea
266 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
● Heritage 'C'

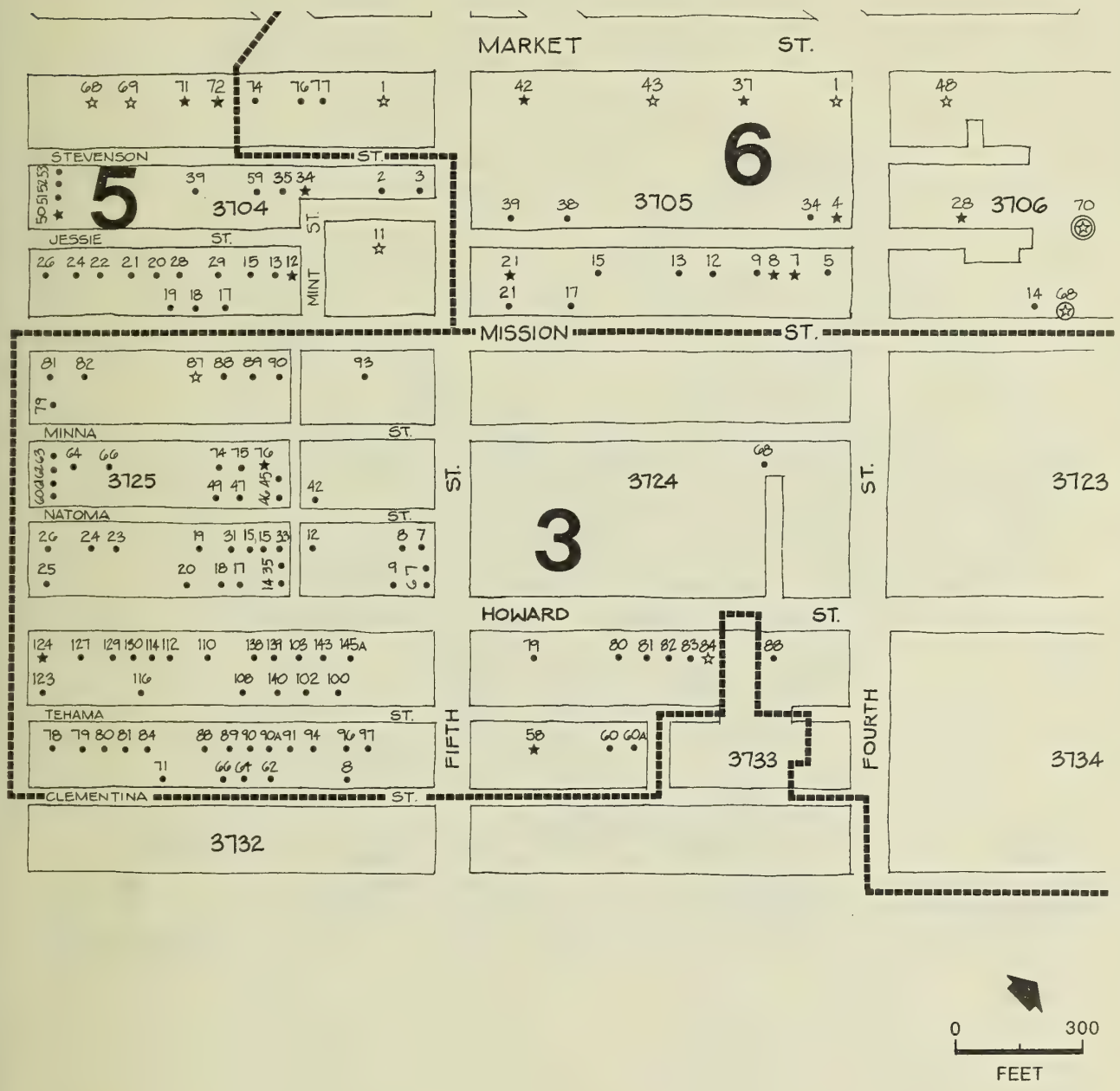
National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.6:
DESIGNATED ARCHITECTURAL RESOURCES
MAP 5

SOURCE: Roger Owen Boyer and Associates



5 EIR Subarea
266 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
● Heritage 'C'

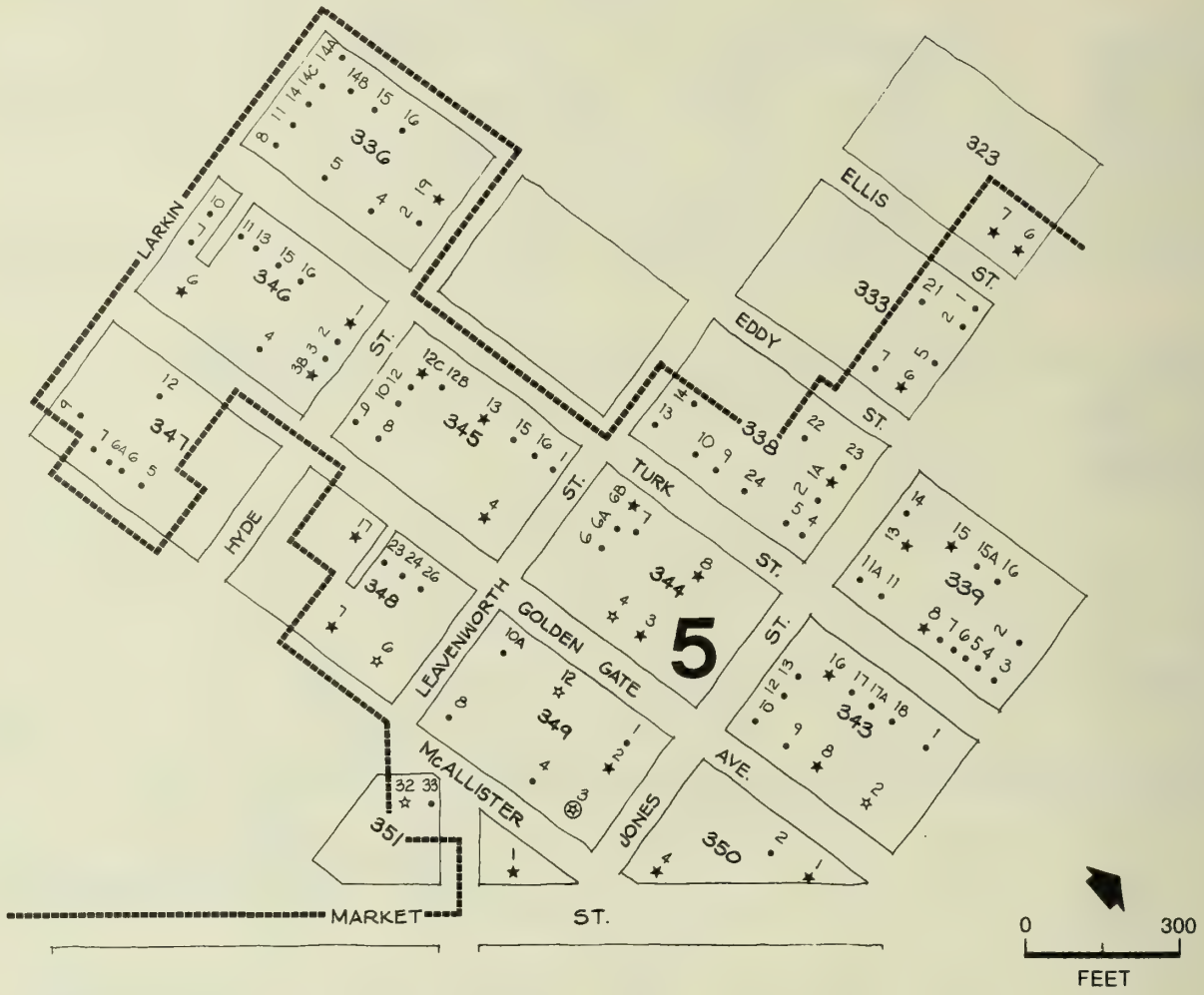
National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.7:
DESIGNATED ARCHITECTURAL RESOURCES
MAP 6

SOURCE: Roger Owen Boyer and Associates



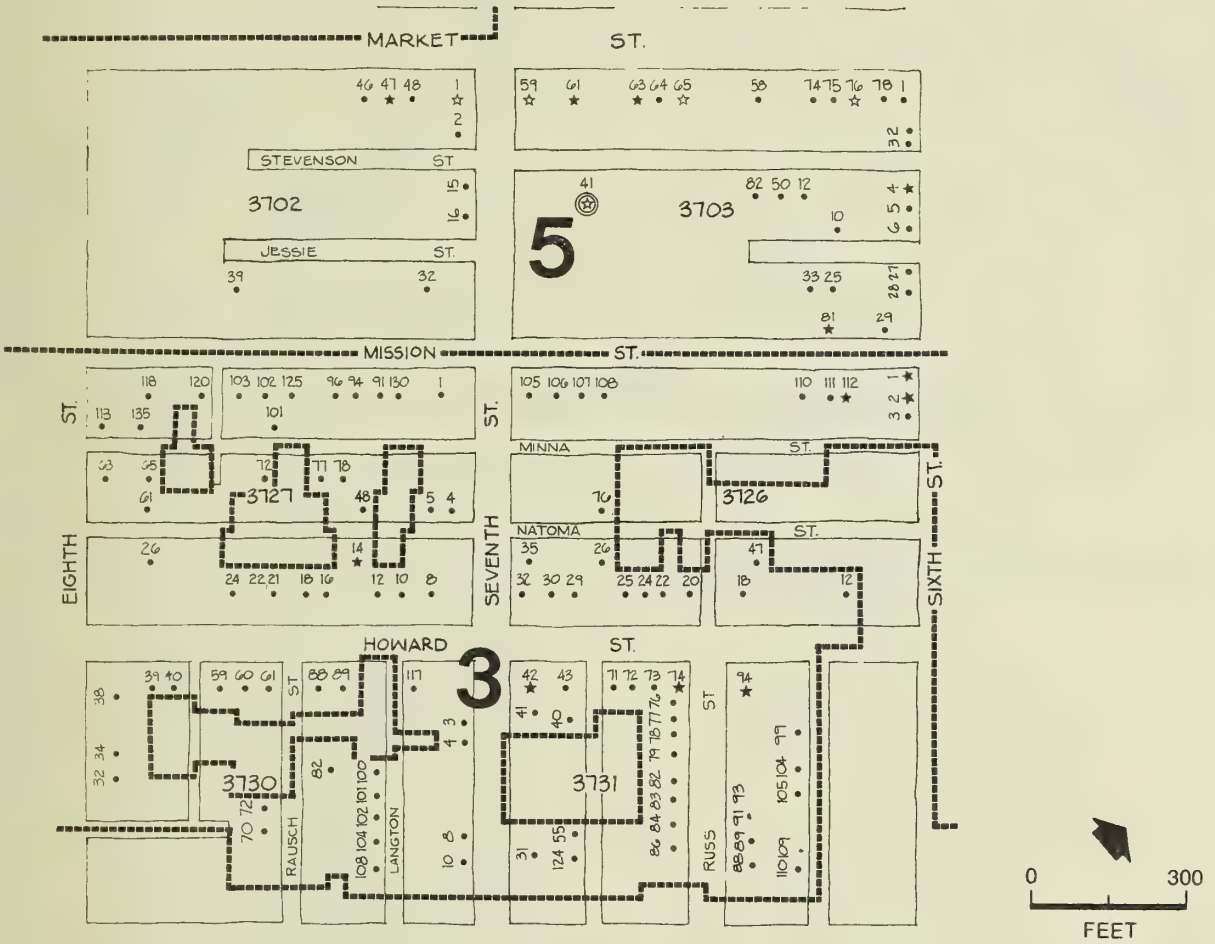
5	EIR Subarea
266	Block Number
129	Lot Number
☆	Heritage 'A'
★	Heritage 'B'
●	Heritage 'C'

⊛	National Register of Historic Places
⊛	City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.8:
DESIGNATED ARCHITECTURAL RESOURCES
MAP 7

SOURCE: Roger Owen Boyer and Associates



5 EIR Subarea
266 Block Number
129 Lot Number
☆ Heritage 'A'
★ Heritage 'B'
● Heritage 'C'

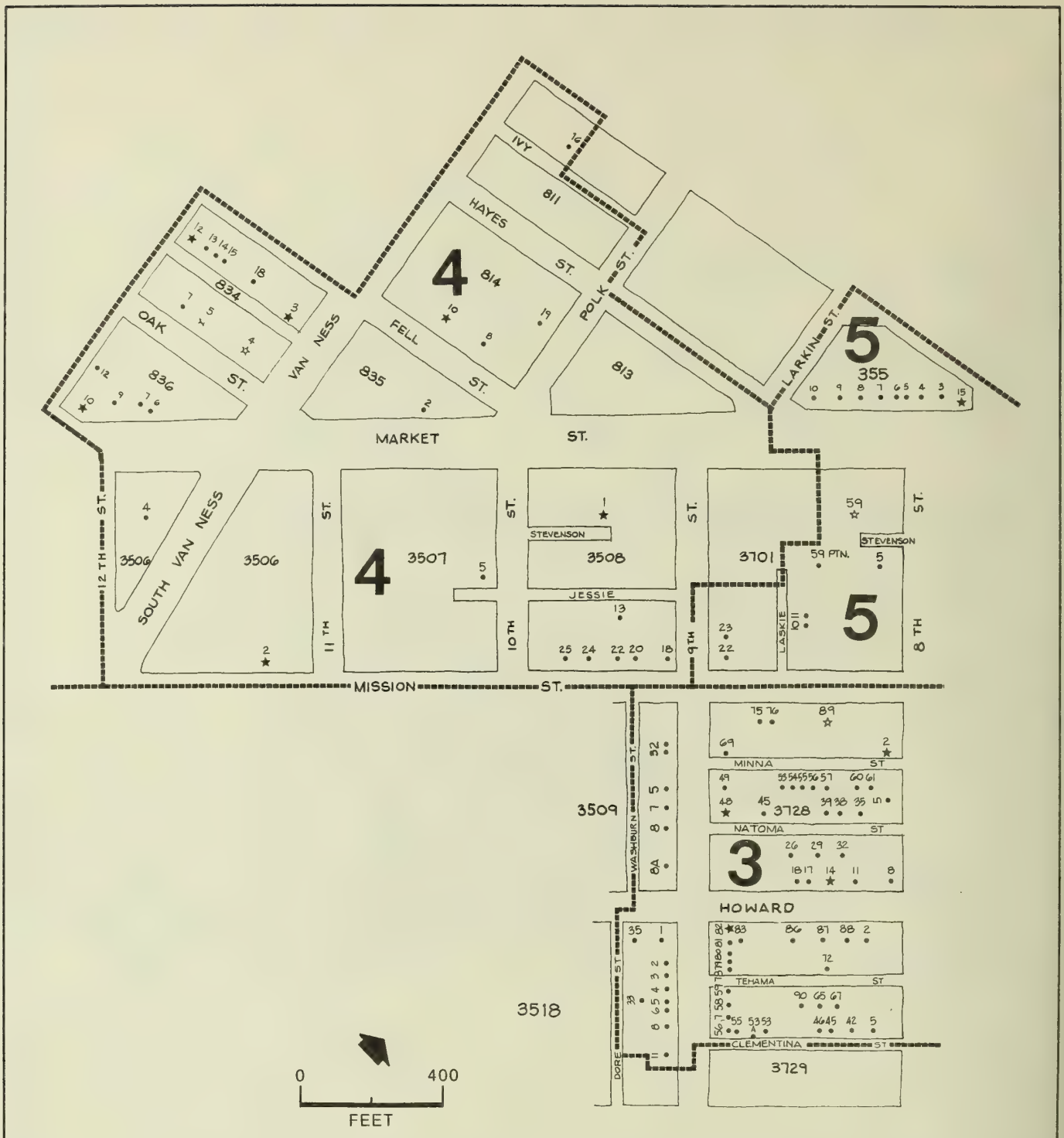
National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.9:
DESIGNATED ARCHITECTURAL RESOURCES MAP 8

SOURCE: Roger Owen Boyer and Associates



5 EIR Subarea

268 Block Number

129 Lot Number

☆ Heritage 'A'

★ Heritage 'B'

● Heritage 'C'

National Register of Historic Places

City Landmark

NOTE: The name, address and other data for each building shown above are presented in Table E.3

FIGURE E.10:
DESIGNATED ARCHITECTURAL RESOURCES
MAP 9

SOURCE: Roger Owen Boyer and Associates

TABLE E.4: RATED BUILDINGS DEMOLISHED IN THE C-3 DISTRICT, 1979 THROUGH OCTOBER 1982

BUILDINGS TOTALLY DEMOLISHED:

	Block/Lot	Name	Address	Heritage /DCP Rating
1	237/15	White & Co. Building	280 Battery Street	B/-
2	289/4	Holbrook Building	585 Sutter Street	B/3
3	329/2	Sommer & Kaufmann Building	828 Market Street	A/3
4	3709/4	Yawman-Erbe Building	50 Fremont Street	B/-
5	329/2A	Hart, Schaffner & Marx Building	840 Market Street	B/-
6	3709/7	-	400-418 Mission Street	C/-
7	3709/10	Golden Gate Building	51-63 First Street	C/-
8	292/6	Thomson & Orman Building	110-116 Kearny Street	C/-
9	292/8	White Building	120-130 Kearny Street	B/-
10	292/4	Foxcroft Building	68-82 Post Street	B/-
11	237/16	-	353 Sacramento Street	B/-
12	288/5	-	109-123 Montgomery Street	C/-
13	288/4	Wilson Building	125-129 Montgomery Street	C/-
14	288/3	-	133-137 Montgomery Street	C/-
15	288/2	Steil Building	141 Montgomery Street	B/-
16	263/2	Oceanic Building	Two Pine Street	B/-
17	263/4	Kirkham Building	64-70 Pine Street	C/-
18	263/5	-	124 Front Street	C/-
19	263/6	-	136 Front Street	C/-
20	263/7	Isuan Building	140 Front Street	C/-
21	263/8	Commercial Building	146-150 Front Street	C/-
22	313/14	City of Paris	199 Geary Blvd.	A/-
23	313/15	Whitney Building	133-153 Geary Blvd.	B/-
24	295/7	Fitzhugh Building	364-384 Post Street	A/-
25	3712/25	Young Building	101-105 Market Street	B/-
26	3712/-	Lincoln Hotel	115-121 Market Street	C/-
27	3712/-	-	125-131 Market Street	C/-
28	3712/-	-	9-23 Main Street	C/-

TABLE E.4: RATED BUILDINGS DEMOLISHED IN THE C-3 DISTRICT, 1979 THROUGH OCTOBER 1982 (Continued)

BUILDINGS TOTALLY DEMOLISHED:

	Block/Lot	Name	Address	Heritage /DCP Rating
29	269/2	-	334 Bush Street	C/-
30	269/2A	-	344 Bush Street	C/-
31	3703/66	Forest Building	1053-1055 Market Street	C/-
32	223/32	Powell Cinema	35-41 Powell Street	C/-
33	208/2	-	643 Montgomery Street	C/-
34	3724/14	-	820 Howard Street	-/3

BUILDINGS PARTIALLY DEMOLISHED:

35	289/31	Anglo & London Paris Bank	One Sansome Street	A/5
36	239/12	A. Borel & Co. Building	440 Montgomery Street	A/-
37	239/14	Italian American Bank	460 Montgomery Street	A/-

SOURCE: Landmarks Preservation Advisory Board and Roger Owen Boyer & Associates

APPENDIX F: EMPLOYER AND EMPLOYEE SURVEYS: METHODOLOGY AND PROCEDURES

INTRODUCTION AND PURPOSE

Two surveys were conducted to gather information for this study: a survey of employers in the C-3 District and a survey of employees working for these employers. Information from the two surveys was used in the employment analysis as the basis for describing current C-3 District employment and workforce characteristics. The Employer Survey responses provided much of the background for the baseline employment forecasts, as well as the basis for assessing the potential location decisions of employers under the market conditions implied by each of the five Alternatives (see Appendix H). The results of the Employer and Employee Surveys were used to assess the effect of the Alternatives on future job opportunities and the characteristics of the downtown labor force. The Employee Survey, in particular, was used to develop current housing and transportation patterns for the C-3 District workforce, as well as to forecast the differences in these areas of analysis under each of the five Alternatives.

The results of surveys have been incorporated into each subject area of this analysis in which they apply. The responses to the employee questionnaire regarding residential location, housing type and housing cost are reported in the Housing section (IV.D); the responses regarding modes of transportation are reported in the Transportation section (IV.E), and the demographic characteristics of downtown workers are reported in the Business and Employment section (IV.C). This Appendix describes the survey methodology for both the Employer and Employee Surveys, including survey administration, sample design, sampling procedure, weighting, and use of the survey results for analysis. The survey results are best understood in the context of the analysis for which they were intended. Therefore, this Appendix does not include a repetition of responses to survey questions.

The scope of issues to be addressed required that information be generated specifically for this analysis. The Downtown EIR Employer and Employee Surveys were conducted to augment existing data sources that are not entirely suitable for this level of study. In the first instance, there is no current data base describing the downtown workforce. Employment statistics are only reported as citywide totals. Many of the relevant 1980 Census data are not yet available, and if they were, special tabulations would be required for the level of analysis expected in this study. Even if these tabulations were available, the Census data could not be analyzed by type of employment (office, retail, hotel, etc.), so that growth of various types of jobs could be related to the housing market and transportation systems./1/

Secondly, and perhaps more important, the sampling methodology used in the Downtown EIR Surveys and the fact that information was gathered from both employers and the employees enable two linkages that are critical to the analysis. The sampling methodology (described in detail herein) enabled the analysis to establish the linkage of types of businesses and employment to types of space. Since the Alternatives directly affect the amount and distribution of space developed for business activities in the C-3 District, their effect on business and employment must be traced through the relationships which could be identified because of the survey methodology. The other linkage, between employer and employee, enables this study to establish important distinctions among the types of job opportunities downtown and the characteristics of those employed in different business activities. Again, the effect of the Alternatives can be traced through business activities (employers) to job opportunities and the characteristics of employees, such as where they might live and how they might commute.

Finally, the Employer Survey, which was carried out through a series of in-depth interviews, provided important qualitative information not available in standard data sources. Of particular importance to the forecasts of the effects of the Alternatives on the downtown San

Francisco business community were survey responses indicating preferences for different locations, the nature of the business functions located in the C-3 District, the future prospects of these and other functions, as well as factors considered in the employers' location decisions.

SURVEY ADMINISTRATION

Overview

The Downtown EIR Employer and Employee Surveys were conducted in two phases: the initial survey in February and March, 1982 and the supplemental survey in July and August of 1982./2/ The total sample included 3,367 employees in 58 different establishments./3/ All sample establishments were located within the boundaries of the C-3 District. (See Figure II.C.1).

The sample was composed of a diverse group of establishments, from sole proprietors to several of the largest business firms located in the C-3 District. In some instances, more than one establishment of a single business participated in the surveys. Private sector, public sector and non-profit office activities were included, as were small retail outlets and large department stores. The sample also included hotels, as well as other activities less prominent in the C-3 District, such as museums, theatres and educational facilities.

The employees in the sample worked for these establishments. The survey sampling design covered only those employees whose primary workplace was in the C-3 District. This design excluded people working in the C-3 District whose base of operation was outside these boundaries, such as messengers, bus and taxicab drivers, building maintenance and security personnel, and on-site construction workers./4/

Employer Survey

The Employer Survey consisted of a confidential personal interview conducted by the consultants with a senior executive or manager knowledgeable about the operations at the establishment selected in the sample, as well as about the firm's overall locational preferences and any plans for moving or expansion. In some cases, the interview was conducted over several sessions with different representatives of the same firm. This occurred most frequently when the establishment selected was part of a larger corporate entity. The more senior personnel would typically respond to questions about previous location decisions, the role of the establishment in corporate plans, other potential locations for the functions housed in the sample establishment, and future prospects for the firm in general as well as the establishment, in particular.

Other parts of the employer interview requested data more readily supplied by on-site managers or personnel departments. Specifically, the Employer Survey requested estimates of building space occupied by the establishment (both net and gross square feet) and of the number of full- and part-time employees working at the establishment. These estimates were used to weight the responses to the Employee Survey (discussed in a later section of this Appendix) and to estimate current employment in the C-3 District (see Appendix H).

The Employer Survey also included an occupation/wage and salary matrix (see Appendix H, Figure H.4). The matrix responses were important for both the Employee Survey weights and the employment analysis. For smaller establishments, the information was often provided during the interview. For larger establishments, the matrix information was often compiled and submitted to the consultants after the interview.

A copy of the interview questions used in the Downtown EIR Employer Survey is available for public review at the San Francisco Department of City Planning, 450 McAllister Street, Room 400.

Employee Survey

The Employee Survey was a self-administered questionnaire distributed to employees at the establishments that agreed to participate in the Downtown EIR Surveys. Distribution was usually arranged to coincide with the employer interview. A contact person at the establishment coordinated the distribution to employees. All completed employee questionnaires were treated as confidential.

Employee Questionnaire Design

The employee questionnaire was prepared as a booklet, prefaced by a letter from the Mayor requesting that the recipient participate in the information gathering effort. Between the initial and supplemental surveys a few questions were added to the employee questionnaire. The additional questions incorporated several mutually exclusive skip-patterns, so the addition to the length of the questionnaire, for any typical respondent, was not great. The original questions were not changed. The extended questionnaire used in the supplemental survey contained 48 questions. Copies of both questionnaires are available for public review at the San Francisco Department of City Planning, 450 McAllister Street, Room 400.

The questions covered a variety of topics, often from several different perspectives. The list that follows highlights the major subject areas in the employee questionnaire.

- Residence - where, how long
- Housing - tenure status, housing type, housing cost
- Transportation - commute modes, commute time
- Parking - where, parking cost
- Job tenure
- Occupation
- Worker household demographics - household size, number of workers and where they work, number of children, household type, household income
- Worker demographics - age, sex, race, foreign born or not

Employee Survey Pretests

Pretests were conducted for both the initial and supplemental employee questionnaires. The initial survey questionnaire was tested at five different firms representing a range of activities: large and small offices, major retail stores, and retail services. The purpose of testing the supplemental survey questionnaire was primarily to determine if the skip-patterns would be understood and whether the questionnaire had become too long. One office establishment participated in the pretest, the results of which indicated that the additional questions fit reasonably well with the original questionnaire, and that the extra length did not deter respondents from completing the questionnaire.

Processing the Survey Data

The completed employee questionnaires were coded by the consultant staff. The coded data were keypunched onto computer cards and verified against the coding sheets. After the keypunched cards were transferred to computer tape, the survey data were reviewed again for inconsistent codes and final corrections were made to the data files.

Some of the information from the Employer Survey was also coded, keypunched and transferred to the computer. The land use designation of the buildings in which each establishment was located, the establishment's Standard Industrial Classification (SIC), total employment in the establishment and the occupation/wage and salary matrix for each establishment were linked, through computer analysis, to the employee responses from each establishment.

SURVEY SAMPLING

Sampling Design

The sample design for the Employer and Employee Surveys had to satisfy several objectives. Establishments and employees had to be randomly selected for the sample. The linkage between employer

characteristics and employee characteristics had to be achieved. The sample size and distribution, in terms of both establishments and employees, had to be adequate for comparative analysis among relevant subgroups.

To achieve these objectives, the sampling design consisted of the following elements, each of which is discussed below:

- a multi-stage cluster sample
- probability of selection proportional to size
- sampling with replacement and
- stratification.

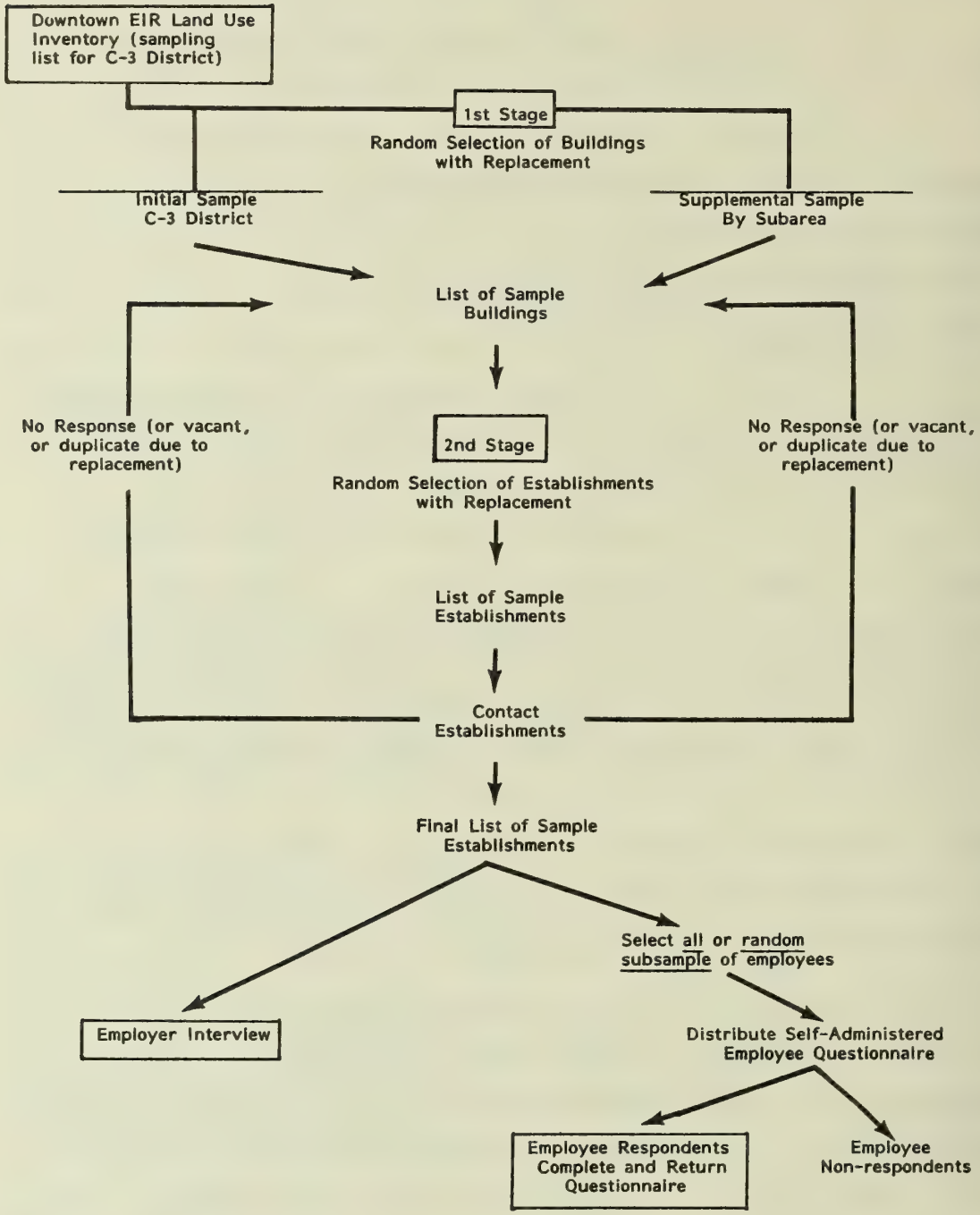
A consequence of this complicated sampling design is that the sample responses must be weighted prior to any analysis of survey results. Each of the elements listed above (in addition to adjustment for non-response) was a factor in the derivation of the sample weights applied to the employer and employee responses. Through this process, sample establishments and sample employees were weighted relative to each other, accounting for any sampling variation from the assumptions inherent in the design. The weighted responses are the best estimates from the surveys of the population characteristics.

Figure F.1 details the structure of the sampling design in both the initial and supplemental surveys. This chart is a useful guide to the following elaboration of the sampling design and procedure.

The primary clusters for the sample were buildings in the C-3 District./5/ The secondary clusters were establishments in those buildings; and the sample units of observation were employees in those establishments./6/ The secondary clusters were also the sample units for the Employer Survey, so the sampling design linked employer and employee characteristics.

The sampling technique used to select the clusters (both buildings and establishments) set the probability of selection proportional to the estimated size of the cluster. Size, in the case of the Downtown Survey, refers to the number of employees in a given building or establishment. Therefore, employees in larger establishments had a

FIGURE F.1: SAMPLING DESIGN FOR DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEYS



SOURCE: Recht Hausrath & Associates

greater probability of being selected for the sample than those in smaller establishments. In other words, each employee in the C-3 District did not have the same probability of being selected./7/

There are two additional aspects of the sample design that complicate the cluster sampling scheme. Sampling with replacement refers to the number of eligible clusters in the list from which each sample selection was drawn. This procedure applied to both the initial and supplemental samples. The other complication, which assured coverage by subarea and use, was the major difference between the two samples.

Deriving unbiased estimates from the sampling technique required sampling with replacement. A building or establishment selected for the sample, continued to be eligible for selection again. Sampling with replacement augments the weighting process described below./8/ If an establishment was selected more than once, the characteristics of the establishment and its employees counted more heavily in the analysis of responses. The weighted survey results were consequently unbiased, and more representative of the overall business composition of the C-3 District.

The overall sample could be used for efficient estimates of the characteristics of different subgroups because a portion of the clusters were selected on the basis of stratified sampling by subarea and a special sample of hotels was drawn to achieve coverage by land use. These sampling rules are the primary distinctions between the initial survey and the supplemental survey. The initial sample design called for random selection of clusters throughout the entire C-3 District. The resultant sample of 23 establishments did not include any establishments in Subarea 3 (Central South-of-Market) and Subarea 7 (Chinatown). In both Subarea 4 (South Van Ness) and Subarea 6 (Union Square), the initial sample included only one establishment. If the sample size had been larger, all of the subareas might have been covered in a random sample of the C-3 District, but this could not be guaranteed, given the small relative size of some of the subareas.

The differences in characteristics by subarea were determined to be an important area of analysis, particularly regarding transportation issues. Therefore, the supplemental survey was undertaken using the same multi-stage cluster sampling technique, but stratifying the first group of clusters by subarea./9/ This strategy ensured that there would be sample establishments from every subarea. Within each subarea, the clusters (both buildings and establishments) were randomly selected. A target number of different sample establishments was determined to provide enough observations for good sample estimates and was not proportional to the relative size of the subareas. Multiple selections of the same establishment did not count towards the target sample size for either land use or geographic coverage.

The design for the supplemental sample also included a special sample of a particular use: hotels. The initial sample did not include any hotels. Although hotels were selected and participated in the supplemental survey stratified by subarea, the number of establishments did not include enough hotels for reliable analysis of the characteristics of this particular use and its employees. Therefore, additional sample selections were made until the number of respondent hotels was determined to be adequate.

Sample Size

The final sample sizes for the Downtown EIR Surveys were 58 different establishments and 3,367 employees. These totals do not count the multiple selection of establishments due to sampling with replacement. The establishments range in size from sole proprietors to offices with several thousand employees.

The results of the employment analysis undertaken using the survey results indicated that there were about 260,000 workers employed in the C-3 District at the time the survey was conducted. The final unweighted sample of employees (3,367 respondents) was thus 1.3% of the estimated total population it is assumed to represent./10/

Some establishments selected in the second phase sample were actually vacant. These establishments did not count, either in the numbers above or in the target sample size for each subarea, but they did provide information used in the estimate of current employment in the C-3 District.

Several considerations were important in determining the appropriate sample size. These include the expected response rate of establishments, the expected response rate of employees, survey budget, and the desired precision of the estimates. Together, these considerations suggest the most cost-effective means of obtaining useful sample estimates.

Given a sampling design, the appropriate sample size can be determined so that there would be a 95 percent probability that estimates derived from the sample would be within $\pm$ 5 percent of the true value. Achieving this degree of reliability in the sample results depends on the degree of sampling variation expected. This in turn depends on the extent to which the coverage of sample establishments is likely to be representative of the population of establishments, and the degree to which employees in any one establishment are representative of the total population of C-3 District workers.

Analysis of preliminary results from the initial survey indicated that the sample of establishments was too small for reliable estimates of the characteristics of the types of businesses of interest. Consequently, stratification by subarea was applied to the cluster sampling scheme for the supplemental sample as the most cost-effective means of producing sample estimates for all subareas. The initial sample was also lacking in coverage of non-office activities, especially retail stores and hotels. Stratification by subarea increased the probability that such uses would be selected, especially in the subareas in which they were a predominant use.

The special problems of cluster sampling were more pronounced in the sample of employees. While the selection of employees is random in

cluster sampling, selection of any one sample unit (employee) is not independent of the selection of others in that establishment. This may result in less precise sample estimates than would a similar-sized random sample of all C-3 District employees, if the employees in each establishment tend to be similar to each other and different from the overall population of C-3 District employees. This turned out to be the case.

In the initial sample, it was decided to distribute questionnaires to as many employees as feasible. Questionnaires were distributed to all employees in most establishments. In a few very large establishments, simple random samples of employees were selected to receive questionnaires. Distributing so many questionnaires in large establishments turned out to be economically inefficient. Greater precision could have been economically achieved by distributing fewer questionnaires to more establishments. In the initial sample, approximately 75 percent of the unweighted employee responses were from only 25 percent of the sample establishments.

In the supplemental sample, an upper limit was placed on the number of employee questionnaires distributed at any one establishment. Because employees in any one establishment tend to be more similar to each other than they are to employees of other establishments, sampling an increased number of different establishments (instead of relying on many respondents from a few large employers) improves the reliability of the sample estimates. Assumptions about expected employee response rates (based on the experience of the initial survey), and comparison of the marginal costs of administering, coding and analyzing both Employer and Employee Surveys with the gain in precision of the estimates, determined the upper limit for distribution of employee questionnaires at any one establishment.

The results of these computations indicated that no more than about 130 questionnaires should be distributed per establishment./11/ This rule was applied in the supplemental Employee Survey. Therefore, although the supplemental sample includes more establishments than the initial

sample (35 compared to 23, or 60 percent of the sample establishments), it includes fewer employee responses (1,015 compared to 2,352, or only 30 percent of the sample employees). The weight factors described later in this Appendix adjust for the relative over-sampling of employees in larger establishments in the initial survey.

Sampling Procedure

Selecting Establishments

To draw a sample of establishments located in the C-3 District with the probability of selection proportional to size required a listing of all such establishments. Prior to the initial survey, a variety of lists were considered, including tax records, phone books and membership lists of corporate organizations. These sources were rejected either because they did not include enough information or because they systematically excluded certain types of businesses or establishments.

The Downtown EIR Land Use Inventory provided an alternative to a list of C-3 District establishments by estimated number of employees./12/ The Inventory consisted of a listing of buildings in the C-3 District. The listing included an estimate of both the total gross square footage (GSF) in each existing building identified, and how the space was distributed by use. Open lot area was also recorded. The Inventory identified the City block and lot locations for each entry, thus allowing the data to be grouped by subarea.

For the sampling procedure, the listings of buildings by use in the Inventory were assigned employment density factors to reflect the relative size of each use in terms of employment. Without this step, the probability that an establishment would be selected would be proportional to the amount of space it occupied. For example, a warehouse of 50,000 gross sq. ft. would have the same probability of being selected in the sample as an office of 50,000 gross sq. ft. The expected employment density (measured as gross square feet per

employee) for office activities is much higher than it is for warehouse activities. Therefore, without the density factors, office employees would be under-represented in the sample relative to warehouse employees.

A sample of buildings was selected from the listing of density-weighted GSF by use recorded in the Land Use Inventory. This was the first stage of the cluster sampling procedure. The probability that a building would be selected was proportional to the entry's density-weighted GSF. For the initial sample, the proportion is determined as follows:

$$\frac{\text{density-weighted GSF in building}}{\text{total density-weighted GSF in C-3 District}}$$

For the supplemental sample, stratified by subarea, the proportion is determined as follows:

$$\frac{\text{density-weighted GSF in building}}{\text{total density-weighted GSF in subarea}}$$

The City block and lot number and, in some cases, the address, provided the identification of the buildings selected in the sample. Field researchers sent to these locations confirmed the use selected and determined whether or not the second stage selection of an establishment was necessary. If the sample selection was a single tenant building, no further selection was necessary. The researcher then determined the appropriate name and address for the sampled establishment.

For multi-tenant buildings, one establishment was randomly picked from each building selected. To try to achieve a probability of selection proportional to size, the random selection of the establishment was based on proxies for the size of the establishment. The proxies were different in the initial and supplemental surveys.

In the initial survey, the building directory was used to provide the listing of establishments. According to this method, an establishment's probability of selection (once the building was selected) was the proportion of total directory lines associated with that establishment:

$$\frac{\text{number of directory lines for establishment}}{\text{total number of directory lines in building}}$$

The assumption implicit in this method was that employment in an establishment would be proportional to the number of directory lines for that establishment.

Preliminary analysis of the initial survey results indicated that this was not necessarily the case. To avoid carrying over sampling errors due to this assumption to analysis of the survey results, information from the building directories in multi-tenant buildings was collected and used to calculate the actual probability for selection of an establishment using this method. This factor, is used in the derivation of the sample weights. Thus, the sample weights account for variation from the assumption that sample selection was strictly proportional to size.

An alternative method of randomly selecting establishments in multi-tenant buildings was devised for the supplemental sample. The proxy for employment used in this method was building space. The assumption in this method was that employment was proportional to building space occupied. An establishment's probability of selection depended on the proportion of total building space occupied by that establishment:

$$\frac{\text{total GSF occupied by establishment}}{\text{total GSF in building}}$$

This method had two stages. First, a floor in the building was randomly selected. If only one tenant occupied that floor, that tenant was the establishment selected in the sample. Second, if more than one tenant occupied the floor, a random point was chosen on that floor and the tenant whose space encompassed that point was the establishment selected. As in the initial survey, the field researcher making the

random selection determined the appropriate name and address of each establishment identified for the sample.

There is a more direct correspondence between occupied building space and employment than there is between directory lines and employment. Nevertheless, because it is not a direct measure of the establishment's proportion of total employment in the selected building, sampling variation from the objective that probability of selection be proportional to size can still occur. The sample weights calculated for establishments selected for the supplemental survey reflect the actual probability of selection, thus accounting for this sampling variation.

The Employer Survey provided information on the actual gross square footage occupied by the sample establishment. This information, in conjunction with the Inventory data on the total gross square footage of the building, was used to calculate the actual probability that the sample establishment would have been selected, once the building was selected.

Establishment Response and Non-Response

In both the initial and supplemental surveys the selection of establishments for the sample was greater than the target sample to allow for substitutions in cases of non-response./13/ The substitutions were not necessarily establishments with the same characteristics as the non-respondents; they were simply other random selections from the Land Use Inventory.

The response rate for sample establishments is the ratio of the number of completed employer interviews to the total number of establishments contacted. In the initial survey, contact was attempted at 43 establishments; 23 responded positively, for a response rate of 54 percent. In the supplemental survey, there were 44 attempted contacts; 35 establishments responded positively, for a response rate of 80 percent. The combined response rate for both surveys was 67 percent.

The initial contact with potential sample establishments was through a letter from Richard Morten, Associate Director for Planning of the San Francisco Chamber of Commerce. The letter provided some background on the study and the business community's support of the study effort. The employer was assured that the establishment's participation would be kept confidential, as would all responses from the employer interview and the employee questionnaire. A copy of the employee questionnaire was enclosed, and the letter requested participation in both the employer interview and distribution of employee questionnaires. The letter advised the initial contact person that the consultants would call to confirm the establishment's participation. In some cases, follow-up by consultants required discussion and scheduling with the initial contact's delegate.

Selecting Employees

After an establishment agreed to participate, the self-administered employee questionnaires were distributed either to all, or to a selected subsample, of the establishment's employees working in the space selected.

The distribution of employee questionnaires is the last probability factor related to the likelihood that a C-3 District employee would be included in the survey sample. The proportion that expresses this probability is the following:

$$\frac{\text{number of questionnaires distributed}}{\text{total employment in establishment}}$$

Employee Response and Non-Response

The consultants delivered the agreed-upon number of questionnaires to the establishment contact person. The establishment contact coordinated the distribution and retrieval of questionnaires within the establishment. Employees were assured that their responses would remain confidential.

The response rate for sample employees is the ratio of the number of completed, returned and coded employee questionnaires to the total number of questionnaires distributed. In the initial survey, 2,352 questionnaires were completed and coded, out of 4,180 distributed, for an overall employee response rate of 56 percent. In the supplemental survey, 1,015 questionnaires were completed and coded, out of 1,838 distributed, for an overall employee response rate of 55 percent.

The response rates varied by establishment and by occupation within establishments. These response rates can be interpreted as estimates of the probability that any one questionnaire distributed to a certain type of employee in the sample would be returned. As such, they are calculated and used to compute the weights applied to each survey response.

WEIGHTING THE SAMPLE RESPONSES

A cluster sampling design, such as the one used for the Downtown EIR Surveys, results in sample units that have unequal probabilities of selection./14/ Analysis of the survey data to derive unbiased estimates of population characteristics requires weighting the responses of both establishments and employees inversely proportional to these different probabilities of selection.

If the population of C-3 District employees had been randomly sampled individually, each worker would have had the same probability of being selected in the sample, and unweighted sample units could be taken as representative of the population as a whole. If units selected by cluster sampling were not weighted, then larger establishments and their employees (those units having the higher probabilities of selection) would be over-represented relative to their actual occurrence in the population. To adjust for this bias inherent in the sampling technique, the responses of smaller establishments and their employees (who were less likely to be selected) were weighted more heavily than the responses of larger establishments and their employees. In effect, the sample weights may be interpreted as the relative numbers of

establishments and employees in the C-3 District that each sample unit represents.

The objective of the sampling design was to select establishments and employees such that their probability of being selected was proportional to the size of the establishment. If this objective had been achieved, then the appropriate sample weights for the employee responses from an establishment would have been simply the inverse of the number of completed questionnaires from that establishment. For a variety of reasons (most of which have been discussed) this objective was not realized.

Because the sample weights must be inversely proportional to the actual probabilities of selection, the calculation of the weights is more complicated that simply the inverse of the number of returned questionnaires. Figure F.2 shows the factors used to calculate the sample weights, for both the initial and supplemental surveys. These factors are the inverse of the proportions shown in the preceding section to represent the various probabilities of selection occurring throughout the sampling process./15/

Sample weights were calculated for both establishments and employees.

$$\begin{array}{c}\text{inverse of}\\ \text{probability}\\ \text{of selecting}\\ \text{building}\end{array} \times \begin{array}{c}\text{inverse of}\\ \text{conditional}\\ \text{probability}\\ \text{of selecting}\\ \text{establishment}\end{array} \times \begin{array}{c}\text{number of times}\\ \text{establishment}\\ \text{selected}\end{array} = \begin{array}{c}\text{Establishment}\\ \text{weight}\end{array}$$

The establishment weights were a factor in the employee weights for each establishment.

$$\begin{array}{c}\text{establishment}\\ \text{weight}\end{array} \times \frac{\begin{array}{c}\text{no. of employees}\\ \text{in establishment}\\ \text{by occupation}\end{array}}{\begin{array}{c}\text{no. of respondents}\\ \text{in establishment}\\ \text{by occupation}\end{array}} = \begin{array}{c}\text{Employee weight}\\ \text{by establishment}\end{array}$$

FIGURE F.2: FACTORS USED TO WEIGHT DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEY RESPONSES

	WEIGHT FACTORS	
	Inital Sample	Supplemental Sample
Inverse of Probability of Selecting Building	$\frac{\text{total density-weighted GSF in C-3 District}}{\text{density-weighted GSF in building}}$	$\frac{\text{total density-weighted GSF in Subarea}}{\text{density-weighted GSF in building}}$
Inverse of Conditonal Probability of Selecting Establishment	$\frac{\text{total lines in building directory}}{\text{number of directory lines for establishment}}$	$\frac{\text{total GSF in building}}{\text{GSF occupied by establishment}}$
Adjustment for Sampling with Replacement	number of times establishment is picked for sample	
Inverse of Conditional Probability of Selecting Employee	$\frac{\text{total employees in establishment}}{\text{number of questionnaires distributed}}$	
Adjustment for Non-Response	$\frac{\text{number of employees in establishment by occupation}}{\text{number of respondents in establishment by occupation}}$	

NOTE: The probabilities of selection are noted next to the weight factors to which they correspond. The selection of establishments and employees depended on the preceding step and are thus conditional probabilities. The weight factors are the inverse of the proportions expressing these probabilities. The weight factor to adjust for non-response is the inverse of the response rate by occupation. The sample weight is directly proportional to the adjustment for sampling with replacement.

SOURCE: Recht Hausrath & Associates

The weight for sample establishments incorporated the first two factors shown in Figure F.2: the inverse of the probability of the building's selection and the inverse of the conditional probability of the establishment's selection./16/ The establishment weight was also directly proportional to the number of times the establishment was picked for the sample.

The expected result of these calculations would be higher weights (larger numbers) for smaller sample establishments, and lower weights (smaller numbers) for larger sample establishments. The weights reflect the relative number of C-3 District establishments that could have been selected, similar to the sample establishment. The following hypothetical example illustrates this concept of representation. Establishments A and B are two sample selections. There are 500 employees in Establishment A, which occupies its own building. There are 10 employees in Establishment B which is located in a multi-tenant building with 30 other establishments of similar size. The weighted employee responses from Establishment B can be interpreted as representing other employees in that multi-tenant building that had similar probabilities of selection but were not selected for the sample. On the other hand, the employees in Establishment A are all that could have been selected in that building; therefore their responses do not have to be weighted to represent others that were not selected.

When the establishment weight is combined with the number of employees in the establishment, however, establishments with larger weights may not contribute as much to the total as establishments with smaller weights because the weights themselves do not necessarily compensate for the difference in magnitude between the unweighted values for each type of establishment. For example, Establishment X has 5 employees and Establishment Y has 300 employees. The sample weight for the former is 80, and the sample weight for the latter is 4. Weighted employment for Establishment X is 400 (5 x 80) and for Establishment Y is 1,200 (300 x 4). Applying the relative weights, Establishment Y (the larger of the two) represents more employees than Establishment X.

The descriptive formula for the sample weights applied to employee responses is shown on page F.18. The additional factor adjusting for nonresponse is the inverse of the employee response rate by occupation. This factor incorporates the probability that an employee would be included in the sample (i.e. receive a questionnaire)./17/

The adjustment for non-response might only have considered the establishment as a whole. Preliminary review of the occupational distribution of the unweighted employee sample, however, indicated that there was a systematic difference in respondents by occupation. Therefore, using the occupation/wage and salary matrix from the Employer Survey, individual response rates for each occupational group within each establishment were calculated. Those who did not respond to the occupation question were given the overall response rate for the establishment. The reciprocal of the occupational response rate (shown in Figure F.2) was the final factor in the calculation of sample weights for employees.

Although the occupational response rates varied considerably by firm, some general conclusions could be drawn. The response rates of professional and managerial employees tended to be higher than average, while those of sales, service, skilled crafts workers, and operatives were lower than average. The response rates for clerical employees were usually near the overall average for the establishment.

Following the logic of the weighting procedure, adjusting to account for variation in response rates by occupation allowed the responses of employees in occupations that were under-represented to be counted more heavily (represent more employees of similar type) than the responses of employees in other occupations in the same establishment. This adjustment was based on the assumption that there were likely to be significant differences in employee characteristics by occupation.

The weight factors in total measure relationships between the various respondents; specifically, the probability that any one sample unit

would be selected compared to the probability of selection of all other sample units. The relative values of the weights, not their absolute magnitude, is the feature of interest. The weights could be scaled to sum to any total.

The weighting procedure was used to pool the survey responses from both the initial and supplemental surveys, because they used different sampling designs. The subarea samples from the supplemental survey had to be weighted to produce unbiased estimates of characteristics for the total C-3 District. In the supplemental survey, a share of the total sample was drawn from each subarea. Thus, the probability that an establishment in any one subarea would be selected was proportional not only to the share of density-weighted GSF in the subarea represented by that establishment's building, but also to the share of total sample selections allocated to that subarea. The same rationale and weight adjustment applied to the establishment weights for hotels selected in the supplemental survey.

The sample weights, when applied to the sample values, result in unbiased estimates of the characteristics and behavior of the total group of C-3 District establishments and their employees. Disaggregating the survey data by subarea or business activity was useful for other analytical purposes. This required another level of adjustment in the weight factors. The final section of this Appendix describes the approach to using the Downtown EIR Survey results.

USING THE SURVEY RESULTS

Types of Issues Addressed

The Employment, Housing and Transportation analyses use the weighted data from the Employer and Employee Surveys. The two data sources provide an overview of the mix of establishments and employees in the C-3 District. Characteristics and behavior patterns for the entire

group of C-3 District businesses and employees can be estimated from these data. Throughout this study, however, distinctions between different subgroups of C-3 District businesses and/or employees are important. The impacts of the five Alternatives are not uniform across business activities, and the consequences of these impacts would be different for different groups of workers. Therefore, the weighted survey data are most commonly analyzed in a disaggregated form.

The format for analysis depends on the issues being addressed. The most common subgroupings of the survey data are either business activity or subarea. Disaggregating by business activity is most important for the employment analysis, while the subarea distinctions are relevant to transportation analysis. Other examples of analysis categories used are: county of residence, commute mode, occupation, household income, tenure status and length of time the employee has worked downtown.

The survey results and their analysis thus serve two functions. First, they describe C-3 District businesses and employees. For example, the Employer Survey responses provide the basis for an estimate of employment by SIC in the C-3 District, while the Employee Survey provided estimates of worker and worker household demographics. Second, analysis of the survey data reveals relationships that explain certain behavior and, in some cases, suggest not only how that behavior might change in the future, but also how sensitive it might be to the effects of the Alternatives. Examples are the analysis of employment densities for business activities and functions, and forecasts of residence patterns for the future C-3 District workforce. Because different subgroups are relevant to different issues, the survey data are more appropriately presented in the relevant subject areas and not in this Appendix.

Some of the ratios derived from the Downtown EIR Employer and Employee Surveys may be used in subsequent analyses of individual projects proposed for the C-3 District or in future planning studies.

The ratio used should be as compatible as possible with the unit under study. Possible groups of interest are office workers, retail workers and hotel workers, or those newly employed downtown. The scope of the Downtown EIR surveys allows these analytical distinctions.

In considering the relevant unit for analysis (the entire C-3 District or various subgroups) the size of the unweighted sample in each group is an important consideration. Table F.1 shows the distribution of the final unweighted samples (both establishments and employees) by both business activity and subarea. The table shows that analysis of detailed characteristics by both business activity and subarea is not reliable, because the sample is too small. Therefore, as mentioned previously, the analyses by business activity or by subarea do not combine both variables. The one exception is office in Subarea 1; detailed characteristics could be studied in this case, and compared to the characteristics of all office employees or all C-3 District employees.

The business activity categories in the table are a collapsed version of the business activities defined elsewhere (with the exception of retail and hotel). The office category includes sample establishments in all of the primary and secondary office activities. The "other" category includes establishments in the cultural/institutional/educational and industrial/warehouse/automotive and parking categories. To improve the analysis, the responses from some sample establishments were counted in more than one category if the sample characteristics provided useful distinctions. In the case of industrial/warehouse/automotive and parking activities, however, the sample size was too small to show detailed characteristics.

The Accuracy of Sample Estimates

The reliability of sample estimates from the Downtown EIR Surveys can be statistically evaluated. Before using critical ratios derived from the surveys, such as the proportion of C-3 District employees living in San Francisco, it is worthwhile to establish the range of possible

TABLE F.1: DOWNTOWN EIR EMPLOYER AND EMPLOYEE SURVEYS: SAMPLE SIZE BY BUSINESS ACTIVITY AND SUBAREA

Subarea	Business Activity									
	Office		Retail		Hotel		Other		Total	
	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.
1	17	1,870	2	18	--	--	--	--	19	1,888
2	5	508	--	--	--	--	1	9	6	517
3	1	58	--	--	1	24	1	1	3	83
4	6	266	--	--	--	--	--	--	6	266
5	2	27	1	3	1	60	6	307	10	397
6	4	29	3	77	2	78	1	1	10	185
7	1	1	2	18	--	--	1	12	4	31
TOTAL	36	2,759	8	116	4	162	10	330	58	3,367

NOTE: The business activity categories shown here reflect the major uses for which sample coverage was considered in the sampling procedure. The office category includes establishments in the primary and secondary office business activities. The "other" category includes establishments in the cultural/institutional/educational and industrial/warehouse/automotive and parking activities discussed in the text.

SOURCE: Recht Hausrath & Associates, Downtown EIR Employer and Employee Surveys

deviation from the true population value. This degree of accuracy is defined statistically in terms of confidence limits.

Confidence limits represent a range encompassing the true population value, within which a sample estimate is expected to fall, a significant proportion of times the population is sampled. This proportion, or the probability that the confidence limits for any sample estimate would incorporate the population value, is the level of confidence specified for the confidence limits. The confidence limits and level of confidence must be expressed together, e.g. at the 95 percent level of confidence the sample estimate is within $\pm$ 4 percent of the true value.

The computation of confidence limits for sample estimates based on a cluster sampling design is considerably more complex than it is for estimates from a simple random sample. Measuring the variance of the estimate must account for both the variation in the proportions between establishments and the uncertainty of the estimates of the proportions for each establishment. In other words, there are two sources of variation that the calculation of confidence limits must address: variation "between units" and variation "within units."

Confidence limits can be computed for every ratio produced by the survey data. The range of the confidence limits, for a specified level of confidence, is not likely to vary considerably among the survey questions over the entire sample. Two examples provide a good indication of the overall accuracy of the survey results. The examples are particularly important variables: the proportion of C-3 District employees who live in San Francisco, and the number of C-3 District workers in households with C-3 District workers.

Taking into account both components of the variation of the estimate, the confidence limits for the proportion of C-3 District employees who live in San Francisco, at the 95 percent level of confidence, are $\pm$ 3 percent. This statistic means that there is a 95 percent certainty that the estimated proportion of C-3 District employees is within 3 percent (in either direction) of the actual proportion. The confidence limits for

the second variable, the number of C-3 District workers in households with C-3 District workers, are ± 2 percent, at the 95 percent level of confidence. These are relatively narrow ranges for confidence limits and indicate a high degree of accuracy in the Downtown EIR Survey estimates from the weighted responses of the entire sample.

Comparison to Other Survey Data

Other surveys have been used to analyze some of the same issues discussed in this study. However, none of the past surveys were as comprehensive as the Downtown EIR Surveys; they were undertaken for different purposes. Consequently, comparative analysis of the results of the Downtown EIR Surveys with these other data sources is generally of limited value, and should only be used for qualitative judgments.

The major survey data sources to which the Downtown EIR Survey results might be compared are: the 1974 SPUR surveys of office and hotel workers in the Central Business District (CBD), surveys conducted for recent EIR's for downtown office buildings, Census surveys, and the South of Market/Folsom Survey recently completed for the Department of City Planning. The sample coverage and methodologies used in these surveys are described in this Appendix to indicate the most relevant and reliable areas for comparison with the Downtown EIR Survey results.

Two surveys were conducted in 1974 for the SPUR study, Impact of Intensive High-Rise Development on San Francisco. The sample of office employees for the office worker survey was drawn from a group of 11 high-rise office buildings in downtown San Francisco that had been built since 1955. The final sample included 1,022 employees in 41 different firms. The sample of hotel employees for the survey of hotel workers consisted of 818 employees in 14 downtown hotels.

Since the SPUR surveys, less formal surveys have been conducted as part of the EIR analysis for some specific downtown office building projects. If the prime tenant for the new building was a firm or

institution already located downtown, then the employees of that firm or institution were surveyed, primarily to determine residence and commute patterns.

Both the SPUR surveys and the EIR surveys pose similar problems in terms of comparison to Downtown EIR Survey results. The prior surveys made no attempt to be representative of more than the selected types of firms and employeees included in the sample./18/ Moreover, these survey results were not weighted to account for differential response rates either by firm or by occupation within the firm./19/ Therefore, observed differences in the responses to similar types of questions may arise largely because of differences in the survey methodologies. It cannot be assumed that these types of comparisons indicate changes over time (such as from the SPUR study in 1974 to the Downtown EIR Survey in 1982) or that they necessarily indicate the differences in behavior among different groups of workers (such as workers in a particular office building from an EIR survey and office workers overall from the Downtown EIR Surveys).

Census data are more comparable to the Downtown EIR Survey results. The lack of 1980 Census data has already been noted as has the necessity for special tabulations by place of work. The journey-to-work reports from Census data, if they could be compiled for the C-3 District, would be the most comparable to Downtown EIR Survey data, depending on the characteristic of interest. Census data on journey-to-work are collected from a sample of population and households. The sample results are weighted to be representative of the total population in the residence area (usually Census Tract) sampled. The most useful and reliable comparisons between the Census results and the Downtown EIR Survey would be for the total population of C-3 District employees. Subgroups are not likely to be comparable (for example, it would probably be difficult to tabulate the census data for business activities comparable to those in this study).

Finally, a survey of establishments and employees in the South of Market/Folsom Area (outside the C-3 District) has recently been completed for the Department of City Planning. This survey followed a sampling design and procedures, including weights for the sample establishments and employees, similar to that described in this Appendix. The employee questionnaire was identical to that used in the Downtown EIR supplemental survey. Comparison of the results of these two surveys would thus be relatively straightforward and would be likely to reveal interesting distinctions useful in future planning and project analyses.

NOTES - Employer and Employee Surveys

/1/ The 1980 Census data available in 1982 are reported by place of residence, not place of work. Further, even by place of residence, detailed socioeconomic characteristics have not yet been tabulated for small areas (cities and parts of cities). Special tabulations of demographic and journey-to-work data, by place of work, for Census Tracts or City blocks, would be of most use in downtown planning efforts. However, it is uncertain if or when such tabulations might be available.

/2/ The surveys were conducted in two phases after it became clear that the initial sample was not large enough for the disaggregated analysis expected in the downtown study. Subsequent sections of this Appendix explain the differences between the two phases as to sample design and sample weights, and explain the procedures by which data from the two phases could be merged for analysis.

/3/ The definition of the term "establishment" as used in the Downtown EIR Surveys and analysis is that used by the Department of Commerce in published employment statistics (such as County Business Patterns). It is "a single physical location where business is conducted or where services or industrial operations are performed." (Office of Management and Budget, Standard Industrial Classification Manual, 1972, p.10.) The distinction between "establishment" and "firm" (more commonly used in discussions of business operations) is important in understanding the sampling scheme. The term "establishment" counts the branch operations or auxiliary facilities of a business firm as separate entities, whereas the term "firm" is all-inclusive. For example, a major financial institution headquartered in the C-3 District would be classified as one firm but would probably consist of several establishments, including the headquarters office, a data processing facility and several branch banks, each counted as an individual establishment.

NOTES - Employer and Employee Surveys (Continued)

/4/ Although these types of workers were not included in the survey sample, they were considered in the employment analysis, using other sources of information. Also see Note 10.

/5/ The Land Use Inventory was not completely consistent in its listings of buildings and uses in buildings. While the intent of the Inventory was to identify all uses in a building, in some cases only the primary (or most visible) use could be noted. Consequently, the term "building" used as the definition of the primary cluster may be more accurately defined as an "inventory entry". Whether the entry selected was a building or the principal use in a building, the sample weights reflect its actual probability of selection.

/6/ In some cases, the primary cluster was a single tenant building. Therefore, the building sampled and the establishment were the same, and there was no need for the secondary cluster stage.

/7/ In samples that are not simple random samples, the survey responses must be weighted. Among other factors, the sample weights applied to the Employer and Employee Survey responses account for the probability that the establishment and the employee would be selected for the sample. The effect of the weights is to ensure that the responses from a few larger establishments do not distort the overall survey results and that the weighted responses are representative of the entire surveyed population.

/8/ Multiple selection from sampling with replacement is accounted for in the formula to derive sample weights for each establishment. If a multi-tenant building were randomly selected more than once, different establishments located there might be selected for inclusion in the sample. Different establishments from the same building did count individually towards the target sample size.

/9/ The term "stratification" is used throughout this description of the sampling design to refer generally to grouping the population according to specified characteristics. In this case, the characteristic of interest was location, particularly subareas of the C-3 District. It should be noted that the sample was not selected proportional to the estimated size of these subareas.

/10/ The C-3 District employment estimate of 260,000 does not include construction workers or building maintenance and security personnel (estimated to be about 12,000 additional workers). As noted previously, these types of C-3 District workers were not covered by the sample design and are consequently not part of the population represented by the sample. (See Table IV.C.1 in the Business and Employment Setting.)

NOTES - Employer and Employee Surveys (continued)

/11/ For establishments with over 130 employees, about 100 employees were selected randomly to receive questionnaires. In some cases, building floors that were occupied by the establishment were randomly selected until the target number of employees was covered. In other cases, the establishment contact for the Employee Survey arranged for selection and distribution across departmental divisions.

/12/ Appendix C is a description of the procedures used to collect and verify the information contained in the Downtown EIR Land Use Inventory. The complete inventory is available for public review at the San Francisco Department of City Planning, 450 McAllister Street, Room 400.

/13/ Establishment non-response encompasses other factors besides refusal to participate in the survey. Repeated attempts to contact the establishment (by mail, telephone or in-person) may have been unsuccessful. Vacant establishments were considered to be non-respondents in the initial survey. Information from these selections, such as actual amount of unoccupied space represented by the sample selection, was not collected. In the supplemental survey, a substitution was also used for vacant establishments, but enough information was collected about these selections to use, with the appropriate sample selection weight, in estimates of C-3 District employment. In the supplemental survey, some basic information was also collected, when possible, for the establishments that refused to participate. This was important in subareas where sample coverage was weaker than others (notably Subarea 7). The information was used to improve the employment estimates (based on weighted survey results) for those areas.

/14/ In simple random sampling, all sample units have equal probabilities of selection. This is the ideal situation for directly applying estimates of sample characteristics to the population, because random sample units would be representative of the population at large. Simple random sampling is often not feasible when the population of interest is large and there is no comprehensive list for identifying individual sample units. In these instances, cluster sampling and/or stratified sampling techniques are used. Analysis of survey responses from samples based on these techniques requires weighting the responses before the sample can be taken as representative of the population.

/15/ The fact that the probabilities of selection were not always strictly proportional to size poses no statistical problems for the analysis of the survey results. The sample weights compensate for error introduced by this type of sampling variation.

NOTES - Employer and Employee Surveys (continued)

/16/ An example of how the establishment weights were used in analysis is the current C-3 District employment estimating procedure described in Appendix H. In this example, the estimates of occupied gross sq. ft. for each establishment, as provided by the Employer Survey, were weighted and used to determine a distribution of occupied space by SIC. The ratio of the weighted sum of occupied gross sq. ft. and the weighted sum of employment for any group of establishments would be the sample estimate of employment density for that type of establishment.

The qualitative responses and responses to open-ended questions from the employer interviews were assessed on a somewhat different basis. For some issues such as perceptions of the downtown, the downtown business climate, and the advantages and disadvantages of a downtown location for attracting employees, the employer interview responses were analyzed on an equal basis. For example, a large department store's responses were given no more weight than those of a small chain retail outlet. For other questions, particularly those dealing with location decisions, the responses of major employers counted more heavily in the analysis than those of small employers, reflecting the magnitude of the effect that a decision by either type might have on business activity in downtown San Francisco.

/17/ The following expression demonstrates that this probability factor is included in the occupational response adjustment:

$$\frac{\text{no. of questionnaires distributed}}{\text{total employment in establishment}} \times \frac{\text{no. of questionnaires returned}}{\text{no. of questionnaires distributed}} \times \frac{\text{occupational distribution of respondents in establishment}}{\text{occupational distribution of employees in establishment}} =$$

$$= \frac{\text{respondents in establishment by occupation}}{\text{total employment in establishment by occupation}}$$

The first factor represents the conditional probability of selecting an employee; the second factor represents the overall establishment response rate. The number of questionnaires distributed is a term in both factors. When the occupational distribution of both respondents and employees is applied to these factors, the product is the response rate by occupations.

NOTES - Employer and Employee Surveys (continued)

/18/ The sampling design for the SPUR survey of office workers included a stratification scheme intended to assure that the sample of firms from a multi-tenant building would be representative of the actual composition of firms in that building. (See SPUR, Impact of Intensive High-Rise Development on San Francisco, 1975, pp. 97-99). It appears that the survey results were not weighted, on the assumption that sample selection was representative. To the extent that there was sampling variation, or that non-respondent firms varied systematically from those agreeing to participate, the unweighted survey results are not unbiased estimates.

/19/ Adjusting for non-response by occupation in the Downtown EIR Employer Survey accounted for systematic differences in response rates by occupation. This adjustment, therefore, improved the reliability of the Survey results. If the respondents in prior surveys were not representative of the occupations in the sample firm, and the characteristics and behavior of the firm's employees varied systematically by occupation, then the unadjusted sample estimates would be biased.

APPENDIX G: LAND USE AND REAL ESTATE DEVELOPMENT ANALYSIS

INTRODUCTION

Analysis of both the demand and the supply of C-3 District space was critical to assessing the land use impacts of the Alternatives. This appendix focuses on the supply considerations, while Appendix H, Employment Analysis, focuses on the demand perspective and how the two aspects were integrated by matching forecast demand (employment growth) with the ability to supply space.

The starting point, from the supply perspective, was the real estate analysis of the Alternatives. The real estate analysis determined how the land use policies of the Alternatives would affect the economics of real estate development in the C-3 District. More specifically, the analysis examined how the Alternative policies regarding the size, shape, height, bulk and location of new development would affect the financial feasibility of new development. It also considered the effects of incentives for historic preservation and for housing production.

The immediate product of the real estate analysis of the Alternatives was an estimate of the amount of space that could be provided according to prototype development situations, throughout the C-3 District, and an indication of the economic incentive to develop associated with different locations in the area. The potential supply of space was integrated with the demand for space from business activities in the C-3 District to produce the forecasts of development by subarea, for each Alternative. The matching process that resulted in the forecasts of how much potential space would be absorbed is described in Appendix H.

The purpose of this appendix is to describe certain key techniques and assumptions used to develop scenarios of real estate activity in the C-3 District under each of the five Alternatives. The Appendix consists of a series of discussions of different parts of the real estate analysis. The real estate feasibility model is described first, followed by

background on preservation incentives (investment tax credit and TDRs) and housing production incentives (office bonuses) and requirements. These sections relate primarily to the forecasts of office space supplied in each Alternative. Then, a description of the process of forecasting office space is provided. This discussion focuses on the real estate market adjustments to changed land use policies and how these adjustments were considered in the forecasting process.

Other topics raised in the land use and real estate development sections of the text are discussed in the final subsection of this Appendix. These include the methodologies for determining other uses in office buildings; forecasting development of retail, hotel and other types of space; and estimating conversions and demolition.

REAL ESTATE FEASIBILITY ANALYSIS

The model for analyzing real estate feasibility is based on the following premise: for development of a site to occur, the value of a new building on the site must exceed the sum of (1) construction and other development costs and (2) the value of the existing building, if any, on the site. The amount of the difference, referred to in this analysis as "value gain", can be interpreted as the sum of the land value and entrepreneurial return for the effort and risk expected in the project. In the real estate feasibility analysis, value gain is the principal indicator of the probability that development would occur on a site.

Figure G.1 describes the real estate feasibility model in equation form. The model incorporates general economic and financial data relevant to the downtown San Francisco office market as well as assumptions from the construction feasibility analysis that produced the office building prototypes (see Appendix D).

Long term market assumptions are a critical part of the model. These assumptions were based on a survey of developers, realtors and other persons knowledgeable about the office real estate market in downtown San Francisco. Sixteen responses were received to the mail-out-mail-back survey. These responses were supplemented with in-depth conversations, where necessary.

FIGURE G.1: REAL ESTATE FEASIBILITY MODEL: COMPONENTS AND DEFINITIONS

Value Gain = VN - VE - DC

where:

VN = Value of the new building (1)
VE = Value of the existing building (2)
DC = Development cost of the new building (3)

(1) Value of new building = (rentable sq. ft. x net rental rate)/capitalization rate

or

VN = [(LA x FAR x GAR x NAR x OR) x (R - OE)] / CR

where:

LA = land area of the site

FAR = the floor area ratio
- assumptions determined by the prototypes

GAR = gross area ratio, the ratio of gross building area to that counted for code calculation purposes
- assumption: 1.12 (a)

NAR = net area ratio, the ratio of rentable sq. ft. to gross building area
- assumption: 0.9 (b)

OR = occupancy rate, the ratio of average space occupied to net rentable space
- assumption: 95 percent (c)

R = rent per sq. ft. (d)

OE = operating expenses per sq. ft.
- assumption: $6.00 per sq. ft. per year (e)

CR = capitalization rate
- assumptions: 9% in Subarea 1
  11% in Subarea 3
  10% in all other subareas (f)

FIGURE G.1: REAL ESTATE FEASIBILITY MODEL: COMPONENTS AND DEFINITIONS (Continued)

(2) Value of existing building = (rentable sq. ft. x net rental rate)/capitalization rate

or

$$VE = [(GSF \times OR) \times (R - OE)] / CR$$

where:

GSF = gross square footage

(3) Development cost = construction costs + related costs

or

$$DC = (CC + RC) \times LA \times FAR \times GAR$$

where:

CC = construction costs per gross sq. ft. (as determined by the prototypes in Appendix D) (g)

RC = developer's overhead, marketing, and financing costs (h)
or
$CC\ [0.3 + (0.01 \times FAR)] + 0.15 \times R$

NOTES:

(a) Roger Boyer & Associates estimate.
(b) Roger Boyer & Associates estimate.
(c) Recht Hausrath & Associates estimate.
(d) See Table IV.B.3 for rent assumptions.
(e) Recht Hausrath & Associates estimate.
(f) Recht Hausrath & Associates estimate based on real estate survey described in text.
(g) Construction costs include construction supervision, general conditions, bonds, permits, architects' fees, engineers' fees, testing engineers' fees, soils investigation and development costs. These are the costs presented in the sample prototypical building summaries in Appendix D.
(h) The term "0.3 + (0.1 x FAR)" estimates the portion of development costs not included in construction costs, plus financing costs, with the latter portion of the term, "0.01 x FAR" reflecting the longer period for which financing is required for larger projects. The term "0.15 x R" estimates marketing costs, which are assumed to be in the vicinity of 15 percent of initial rents.

SOURCE: Recht Hausrath & Associates

The first important market assumption is office rent. It would not be possible or necessarily more accurate to assign office rents on a site-specific basis. Neither was it considered adequate to assume a gross overall rent for the entire C-3 District or by the seven C-3 District subareas which do not correspond to office location preferences. Using the market information gathered for this study, the C-3 District was divided into eight rent areas, labelled A through H in the map, Figure IV.B.1, on page IV.B.6 in the Land Use and Real Estate Development Setting. The rent areas were defined as locations in which the office rents were relatively homogeneous and could be distinguished from office rents in another area. Therefore, the typical office rents shown in Table IV.B.3 describe the degree to which locations in each area are projected to be valued higher or lower than locations in other areas of the downtown office market during the 1990 to 2000 period.

The rents assumed reflect projected office market conditions roughly one decade in the future, expressed in constant 1982 dollars. Consequently, typical office rents in Rent Areas G, E, and F, are assumed to be moderately higher than the present, in the anticipation that the attractiveness of these areas as office locations will increase.

It was necessary to establish typical rents in each area for existing buildings as well as for buildings constructed sometime in the future. There are wide variations in rents in existing buildings. For example, a building built in the 1960's or 1970's (for example, the Bank of America building) would have much higher rents than an older building for which the owner is anticipating demolition. The rent chosen is typical of relatively old buildings in reasonable condition, the type of building for which the decision between retention and demolition would be difficult to make./1/

The second important assumption in the real estate feasibility analysis is operating expenses. Interviews with property management professionals provided the basis for this assumption. There is much less variation in operating expenses among downtown office buildings than there is in rents. Therefore, an average annual operating expense of $6.00 per

gross sq. ft. is assumed to be a satisfactory estimate for all buildings. This cost is assumed to remain constant over time (in constant dollars).

The third critical element is the capitalization rate. The capitalization rate expresses an estimate of the relationship between a building's market value and annual net revenues. The ratio is assumed to be .10 in all subareas except Subareas 1 and 3. In Subarea 1, the capitalization rate is assumed to be .09, and in Subarea 3, it is assumed to be .11. A lower capitalization rate reflects greater confidence in future returns, and thus a willingness to accept a lesser return in the present.

A computer program incorporated the overall feasibility assumptions and those specific to each Alternative (the FAR and construction cost assumptions for the building prototypes). Using the Downtown EIR Land Use Inventory data base, the computer analysis tested the economic feasibility of developing the building prototype allowable on each parcel under each Alternative./2/ The computer analysis calculated (1) the value gain and (2) a ratio of value gain to the value of the new building. The ratio has the advantage that it is independent of the size of the building and thus allows the comparison of a site with a large project to a site with a small project. The highest ratios resulting from this analysis were about 40 percent, for vacant sites or sites with small buildings in the most preferable location (Rent Area A).

These value gain ratios served as an indicator of the likelihood of office development on each parcel under each Alternative./3/ They are not a precise determinant but rather a rough indicator of development profitability. For a given parcel, the differences in the value gain and the value gain ratio between the Alternatives are a measure of the impacts of the Alternatives on the likelihood of development. For each Alternative, the computer analysis produced a list of all parcels in a subarea in the order of the value gain ratios, i.e. in the order of their likelihood of being developed.

Value gain ratios were calculated for the sites proposed to be developed in projects either approved or under formal review. These ratios were compared with the list of ratios from the computer analysis to check the predictive capability of the methodology. With only a few exceptions, the value gain ratios for proposed projects appeared high on the list of sites likely to be developed. This finding substantiated the use of the model in identifying probable development patterns.

The information generated by the computer analysis provided relative rankings of sites in terms of their likelihood of development under different conditions regarding future C-3 District land use policies. This information was used as input to the forecasting of office development in the 1990 to 2000 period under each Alternative.

- The value gain calculations offered insight into the values of land and buildings in downtown San Francisco and how they varied. (The numbers calculated were compared with a number of real estate market values to confirm the general accuracy of the calculated values.)

- An analysis of the pattern of sites with high value gain ratios was used as an indication of the types of buildings and locations for which new development was probable.

- The differences in value gain ratios were identified among the Alternatives (assuming constant rents for all Alternatives at this stage of the analysis). These differences in value gains identified the possible effect on development feasibility of the policies of each Alternative and provided evidence of the relative likelihood of development under each Alternative. Although the potential for higher rents was considered next within the context of the demand for space (see discussion beginning on page G.30), the differences in value gains assuming constant rents provided the basis for considering the potential effects of the Alternatives on land values and project feasibility if rents did not increase.

- The lists of sites in the order of value gain ratios were compared among Alternatives to identify how the policies of the Alternatives were likely to affect the location of development and the types of uses and existing buildings likely to be demolished. For example, comparison among Alternatives of the lists

of sites in a particular subarea in order of value gain identified sites or portions of subareas which were more likely to be developed under one Alternative than another.

The listings were also useful in identifying the amount of existing space which would be demolished to provide a particular amount of new space or, alternatively, the amount of new space provided if a particular number of existing sites were redeveloped. These types of differences among Alternatives provided insights into the effect of the policies of the Alternatives on the amount and location of development.

- The lists of sites in order of value gain ratios (by Alternative and by Subarea) were also used to consider the implications of the Alternatives in terms of the number of sites with historic structures that would be threatened by development and the existing land uses that would be demolished by new development.

The types of information described above provided analysis of how the Alternatives potentially affected the supply of newly developed space in the C-3 District. In other words, the real estate feasibility model was used to test how the policies of the Alternatives affected the relative ranking of sites and of portions of subareas as candidates for new development.

This level of analysis was done before the supply considerations were "matched" with the demand for space to accommodate employment growth. The real estate development forecasts were an output of the matching process and not a direct result of the feasibility testing done with the real estate feasibility computer model. The computer analysis was input into the forecasting process.

Another way to explain the process of forecasting future development and economic activity is to visualize two preliminary analyses done as a first phase and then a second phase analysis to integrate the results of the first phase work. The two preliminary analyses include the work done to separately analyze the supply and demand aspects of future downtown development. The supply aspects are those described in this Appendix.

In addition to the real estate feasibility testing of the development prototypes described above, the real estate feasibility model was also used for analysis of incentives to preserve architecturally significant resources (investment tax credits and the TDR programs of the Alternatives) and the analysis of the extent to which office bonuses for the provision of housing could lower housing development costs. These two analyses are described in the following subsections of this Appendix./4/ They should also be considered as "supply-side" analyses done to test the potential effects of policies in each of these policy areas. The results of these three analyses (prototype analysis, analysis of incentives to preserve architectural resources, and analysis of incentives to produce housing) together, provided input into the process of forecasting future development. In other words, these "supply-side" analyses were used to interpret the policies of the Alternatives from a real estate market perspective.

Following the next two subsections, this Appendix briefly discusses the process of "matching" supply and demand considerations to forecast future development. A more detailed description of the matching process is provided in Appendix H. However, further discussion is then included in this Appendix to describe how the forecasting process considered all of the real estate market adjustments which could occur because the supply of newly developed space (amount, location, type, and cost of developing it) would vary among Alternatives. A major consideration is how rents for space are likely to change over time and differ among Alternatives as those seeking space in the C-3 District react to different supply conditions. Rents cannot be considered without evaluating both demand and supply factors.

Those who are not interested in reading the analysis of incentives for historic preservation and for housing production can turn to page G.30 to resume the discussion of how these supply analyses were incorporated into development forecasts.

ECONOMIC ANALYSIS OF INCENTIVES TO PRESERVE ARCHITECTURAL RESOURCES

Tax Credits for the Rehabilitation of Historic Buildings

The discussion of the economic factors affecting the feasibility of preserving historic buildings must include consideration of the effect of the federal income tax credit provided to encourage the rehabilitation of such buildings. If the value of this incentive approaches the value gain from demolition and new development, rehabilitation becomes a more attractive development option. This aspect of the real estate analysis is independent of the policies of the Alternatives.

There are three levels of investment tax credits intended to make rehabilitation of older commercial buildings financially attractive: (1) a 15 percent investment tax credit for buildings at least 30 years old; (2) a 20 percent investment tax credit for buildings at least 40 years old; (3) a 25 percent investment tax credit for certified historic structures./5/ The 25 percent investment tax credit is analyzed here. This incentive is available to a more limited group of buildings than would be the TDR programs of any of the Alternatives. Moreover, to take advantage of it, the historic building owner or developer must invest in rehabilitation that meets specified standards. Comparable investment would not be required in any of the TDR programs. Nevertheless, the analysis which follows illustrates the potential of the investment tax credit as a preservation tool in a variety of development situations.

In order to assess the effect of the tax credit on the decision to rehabilitate an existing building or construct a new building on its site, four case studies are analyzed. Tables G.1 through G.4 depict the four different cases, determining for each the value gain from (1) retention and rehabilitation and (2) demolition and development on the site. The first column shows information about the existing building. The second shows the situation with that building rehabilitated and the third with its demolition and construction of a new building on the site.

TABLE G.1: VALUE OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-0 DISTRICT WITH FAR OF 4 (a)

	Existing Building	Rehabilitated Building	New Building (Alternative 1)
Floor Area Ratio (FAR)	4	4	14
Annual Rent (per rentable sq. ft.)	$20	$32	$32
Annual Operating Costs	6	6	6
Annual Net Rent	14	26	26
Value (per sq. ft. of land)	600	1,110	3,870
Rehabilitation/Development Costs			
per gross sq. ft. of building	--	100	154
per sq. ft. of land	--	450	2,420
Value of Existing Building per sq. ft of land	--	600	600
Value Gain per sq. ft. of land(b)	--	60	850
Tax Incentives (per sq. ft. of land)			
Investment Tax Credit(c)	--	112	--
Annual Value of Increased Depreciation(d)	--	13	61
Total Tax Incentives Over Three Years	--	150	180
Value Gain Plus Investment Tax Credit	--	170	850
Value Gain Plus Total Tax Incentives	--	210	1,030

(a) Calculations as per the model described in the text and in Figure G.1, assuming a parcel in Rent Area B.
(b) Value Gain = Value - Development Cost - Value of Existing Building. (c) Investment Tax Credit = .25 x Rehabilitation Cost.
(d) Value of Increased Depreciation:
rehabilitated building = (Rehabilitation Cost/15 yrs.) x (50% tax bracket)
new building = [(Development Cost - Value Existing Building)/15 yrs.] x (50% tax bracket) Assumes value of depreciation of existing building is foregone.

SOURCE: Recht Hausrath & Associates

TABLE G.2: VALUE OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-0 DISTRICT WITH FAR OF 8 (a)

	Existing Building	Rehabilitated Building	New Building (Alternative 1)
Floor Area Ratio (FAR)	8	8	14
Annual Rent (per rentable sq. ft.)	$20	$32	$32
Annual Operating Costs	6	6	6
Annual Net Rent	14	26	26
Value (per sq. ft. of land)	1,200	2,220	3,870
Rehabilitation/Development Costs			
per gross sq. ft. of building	--	100	154
per sq. ft. of land	--	900	2,420
Value of Existing Building per sq. ft. of land	--	1,200	1,200
Value Gain per sq. ft. of land(b)	--	120	250
Tax Incentives (per sq. ft. of land)			
Investment Tax Credit(c)	--	224	--
Annual Value of Increased Depreciation(d)	--	26	81
Total Tax Incentives Over Three Years	--	300	240
Value Gain Plus Investment Tax Credit	--	340	250
Value Gain Plus Total Tax Incentives	--	420	490

(a) Calculations as per the model described in the text and in Figure G.1, assuming a parcel in Rent Area B.
(b) Value Gain = Value - Development Cost - Value of Existing Building. (c) Investment Tax Credit = .25 x Rehabilitation Cost.
(d) Value of Increased Depreciation:
rehabilitated building = (Rehabilitation Cost/15 yrs.) x (50% tax bracket)
new building = [(Development Cost - Value Existing Building)/15 yrs.] x (50% tax bracket) Assumes value of depreciation of existing building is foregone.

SOURCE: Recht Hausrath & Associates

TABLE G.3: ANALYSIS OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-R DISTRICT WITH FAR OF 2 (a)

	Existing Building	Rehabilitated Building	New Building (Alternative 1)
Floor Area Ratio (FAR)	2	2	10
Annual Rent (per rentable sq. ft.)	$18	$28	$28
Annual Operating Costs	6	6	6
Annual Net Rent	12	22	22
Value (per sq. ft. of land area)	230	420	2,110
Rehabilitation/Development Costs			
per gross sq. ft. of building	--	100	146
per sq. ft. of land	--	220	1,630
Value of Existing Building per sq. ft. of land	--	230	230
Value Gain per sq. ft. of land(b)	--	(30)	250
Tax Incentives (per sq. ft. of land)			
Investment Tax Credit(c)	--	56	--
Annual Value of Increased Depreciation(d)	--	7	54
Total Tax Incentives Over Three Years	--	80	160
Value Gain Plus Investment Tax Credit	--	30	250
Value Gain Plus Total Tax Incentives	--	50	410

(a) Calculations as per the model described in the text and in Figure G.1, assuming a parcel in Rent Area C.
(b) Value Gain = Value - Development Cost - Value of Existing Building.
(c) Investment Tax Credit = .25 x Rehabilitation Cost.
(d) Value of Increased Depreciation:
rehabilitated building = (Rehabilitation Cost/15 yrs.) x (50% tax bracket)
new building = [(Development Cost - Value Existing Building)/15 yrs.] x (50% tax bracket) Assumes value of depreciation of existing building is foregone.

SOURCE: Recht Hausrath & Associates

TABLE G.4: ANALYSIS OF TAX INCENTIVES FOR HISTORIC PRESERVATION - PARCEL IN C-3-R DISTRICT WITH FAR OF 4 (a)

	Existing Building	Rehabilitated Building	New Building (Alternative 1)
Floor Area Ratio (FAR)	4	4	10
Annual Rent (per rentable sq. ft.)	$18	$28	$28
Annual Operating Costs	6	6	6
Annual Net Rent	12	22	22
Value (per sq. ft. of land)	460	840	2,110
Rehabilitation/Development Costs			
per gross sq. ft. of building	--	100	146
per sq. ft. of land	--	450	1,630
Value of Existing Building per sq. ft. of land	--	460	460
Value Gain per sq. ft. of land(b)	--	(70)	20
Tax Incentives (per sq. ft. of land)			
Investment Tax Credit(c)	--	112	--
Annual Value of Increased Depreciation(d)	--	13	21
Total Tax Incentives Over Three Years	--	150	63
Value Gain Plus Investment Tax Credit	--	40	20
Value Gain Plus Total Tax Incentives	--	80	40

(a) Calculations as per the model described in the text and in Figure G.1, assuming a parcel in Rent Area C.
(b) Value Gain = Value - Development Cost - Value of Existing Building.
(c) Investment Tax Credit = .25 x Rehabilitation Cost.
(d) Value of Increased Depreciation:
rehabilitated building = (Rehabilitation Cost/15 yrs.) x (50% tax bracket)
new building = [(Development Cost - Value Existing Building)/15 yrs.] x (50% tax bracket) Assumes value of depreciation of existing building is foregone.

SOURCE: Recht Hausrath & Associates

The value gain for rehabilitation and for new construction is calculated as per the model of real estate feasibility described above (see Figure G.1). The rehabilitation generates an investment tax credit equal to 25 percent of the rehabilitation expenses. Depreciation is also generated and provides a further tax incentive. The new building, being larger, has a greater depreciation deduction, but the depreciation incentive is presumably reflected in the value gain from new construction. The investment tax credit could have additional financial value not indicated by this analysis. The property owner/developer would be able to claim the tax credit earlier than the value gain from new development.

The first two buildings analyzed in Tables G.1 and G.2 are assumed to be located on sites in the C-3-0 area (Subarea 1), differing only in the size (FAR) of the buildings. For an existing building with an FAR of four, the value gain resulting from the rehabilitation of the building ($60 per square foot of land) is less than ten percent of the value gain resulting from demolition and development of the new building ($850). For the building with an FAR of eight, the value gain from the new building is only about twice that gained from the rehabilitation of the existing building.

While these numbers would vary with different assumptions, especially depending on the condition of the historic building, they illustrate that the value gain from the demolition of the historic building and the development of a new building exceeds the value gain from the rehabilitation of the existing building by a relatively greater amount for smaller existing buildings than for larger ones. This is a logical conclusion as more existing value is foregone when a larger building is demolished.

The calculations in Tables G.1 and G.2 indicate that the value of the tax incentive is relatively small in comparison to the value gain from new development in Subarea 1, if the historic building is small relative to the allowable FAR on the parcel. For example, Table G.1 shows that the investment tax credit for rehabilitation is less than 15 percent of

the value gain from new development. For larger existing buildings, however, the value gain from development is less and the investment tax credit is larger. In the example shown in Table G.2, the tax advantages from rehabilitation are of the same order of magnitude as the value gain differential enjoyed by the new development case. The value gain differential between new development and rehabilitation is relatively small when the historic building is large, and in these situations the investment tax credit becomes a more important factor in the decision whether or not to rehabilitate the building.

The same pattern is evidenced in the cases of the two buildings located in the C-3-R district (Subarea 6), where rental rates (Rent Area C) are generally not as high as in Subarea 1. The analysis of these buildings is shown in Tables G.3 and G.4. Again, the buildings differ only in size. The value gain for the rehabilitation is negative in both cases, while that for the new building is modest for the small building and negligible for the building with an FAR of four.

The effect of the tax incentives for rehabilitation is to offset the negative value gain. Again, for the smaller historic building the effect is too small to change the development decision (Table G.3). For the larger building the tax incentives more than offset the differences in value gains (Table G.4).

TDR Values for Preservation of Historic Buildings

The five Alternatives offer different TDR programs as incentives for the preservation of historic buildings. This section analyzes for each Alternative four potential cases of TDR transactions to determine the effectiveness of the TDR programs. These cases are the basis for the conclusions presented in Section V.B, Land Use and Real Estate Development Impacts.

The extent to which TDRs would be utilized, and hence historic buildings saved, depends on whether the price for which TDRs from the historic building can be sold exceeds the value gain that the

demolition and redevelopment of the property would yield. In other words, can the developer of another building pay such a price and, by purchasing unused FAR, increase the value gain for the new development project? The calculations set forth in the description of the real estate feasibility model in Figure G.1 were performed on prototype buildings to determine the value of TDRs (to owners of historic buildings) and the value gain (from demolition and new development) with which they would have to compete. The cost assumptions used in the table reflect the estimates prepared for the construction prototypes.

Tables G.5 through G.9 provide the critical information about these calculations./6/ The first four columns (A-D) contain information concerning four hypothetical development situations. Examples A, B and C are all located on identical sites in Subarea 1; they differ only in the size of the existing building on the site, which means they differ in the unused FAR they could sell as TDRs to a developer. The value gain from new development therefore differs among these three examples, as the value lost from demolition of the existing building and the cost of terminating occupancy and wrecking the structure is larger for larger buildings. It can be seen that for Alternative 1 the demolition and redevelopment of Example C, the largest building, is only marginally profitable (at $170 per sq. ft. of land) while the redevelopment of Example A, the smallest building is seven times as profitable (at $1,200 per sq. ft. of land).

Example D assumes a building in Subarea 6 where the rents are not as high as in Subarea 1. In Alternative 1, for example, the smaller FAR allowed and the lower rents obtainable result in a gain from development of $250 per sq. ft. of land, much lower than the value gain from development involving the demolition of a building with a FAR of two in Subarea 1, Example A, where the value gain was $1,200 per sq. ft. of land.

The critical factor is the price at which the sale of TDRs would yield the same value gain as development. The value gain (from new development) divided by the unused FAR determines this price, except

TABLE G.5: VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDRs) FROM DESIGNATED HISTORIC BUILDINGS(a): ALTERNATIVE 1

	A	B	C	D	E	F	G(d)	H
Subarea/Development Situation	1	1	1	6	Build B Save A	Build B Save C	Build B Save D	Build D Save D
FAR Existing Building(b)	2	4	8	2	4-2	4-8	4-2	2-2
Unused FAR	12	10	6	8	--	--	--	--
TDR Cost per FAR(c)	$100	$80	$30	$30	$100	$30	$30	$30
TDRs Purchased	--	--	--	--	12	6	8	8
FAR-New Building	14	14	14	10	26	20	22	18
Value-New Building	$3,870	$3,870	$3,870	$2,110	$7,190	$5,530	$6,090	$3,790
Development Cost	2,370	2,420	2,510	1,630	4,760	3,350	3,940	3,090
Value-Old Building	300	600	1,190	230	600	600	600	230
TDR Purchase Cost	--	--	--	--	1,200	170	250	250
Value Gain	$1,200	$ 850	$ 170	$ 250	$ 630	$1,210	$1,300	$ 220

NOTE:

Individual building examples:
- A-C Assuming a parcel in Subarea 1, Rent Area B
- D Assuming a parcel in Subarea 6, Rent Area C

Development situation examples using transferable development rights (TDRs):
- E Develop Building B assuming Building A is a designated historic building and using its TDRs.
- F Develop Building B assuming Building C is a designated historic building and using its TDRs.
- G Develop Building B assuming Building D is a designated historic building and using its TDRs.
- H Develop Building D assuming another building like D is a designated historic building and using that building's TDRs.

(a) First read Examples A-D, the economics of individual buildings; then read the Examples E-H, the examples of development situations using TDRs.
(b) FAR = Floor Area Ratio, the number of square feet of building per square foot of land.
(c) The dollar amounts in this table are expressed per square foot of land. The cost per FAR of TDRs is equal to the Value Gain divided by the unused FAR.
(d) Alternative 1 only allows TDRs to be transferred to adjacent parcels; thus Example G seldom occurs.

SOURCE: Recht Hausrath & Associates

TABLE G.6: VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDRs) FROM DESIGNATED HISTORIC BUILDINGS(a): ALTERNATIVE 2

	A	B	C	D	E	F	G	H
Subarea/Development Situation	1	1	1	6	Build B Save A	Build B Save C	Build B Save D	Build D Save D
FAR Existing Building(b)	2	4	8	2	4-2	4-8	4-2	2-2
Unused FAR	10	8	4	6	--	--	--	--
TDR Cost per FAR(c)	$50	$40	--	$10	$50	$0	$10	$10
TDRs Purchased	--	--	--	--	6	6	6	4
FAR-New Building	12	12	12	8	18	18	18	12
Value-New Building	$3,320	$3,320	$3,320	$1,690	$4,980	$4,980	$4,980	$2,530
Development Cost	2,080	2,130	2,220	1,380	3,280	3,280	3,230	2,110
Value-Old Building	300	600	1,190	230	600	600	600	230
TDR Purchase Cost	--	--	--	--	280	0	40	30
Value Gain	$ 940	$ 590	($90)	$ 80	$ 820	$1,100	$1,060	$ 160

NOTE:

Individual building examples:

A-C Assuming a parcel in Subarea 1, Rent Area B.
D Assuming a parcel in Subarea 6, Rent Area C.

Development situation examples using transferable development rights (TDRs):

E Develop Building B assuming Building A is a designated historic building and using its TDRs.
F Develop Building B assuming Building C is a designated historic building and using its TDRs.
G Develop Building B assuming Building D is a designated historic building and using its TDRs.
H Develop Building D assuming another building like D is a designated historic building and using that building's TDRs.

(a) First read Examples A-D, the economics of individual buildings; then read the Examples E-H, the examples of development situations using TDRs.
(b) FAR = Floor Area Ratio, the number of square feet of building per square foot of land.
(c) The dollar amounts in this table are expressed per square foot of land. The cost per FAR of TDRs is equal to the Value Gain divided by twice the unused FAR.

SOURCE: Recht Hausrath & Associates

TABLE G.7: VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDRs) FROM DESIGNATED HISTORIC BUILDINGS(a): ALTERNATIVE 3

	A	B	C	D	E	F	G(d)	H
Subarea/Development Situation	1	1	1	6	Build B Save A	Build B Save C	Build B Save D	Build D Save D
FAR Existing Building(b)	2	4	8	2	4-2		4-2	2-2
Unused FAR	6	4	0	5	--	NO	--	--
TDR Cost per FAR(c)	$ 100	$ 60	--	$ 30	$ 100	TDRs	$ 30	$ 30
TDRs Purchased (e)	--	--	--	--	6	AVAILABLE	6	3
FAR-New Building	8	8	8	7	14	THROUGH	14	10
						SAVING		
Value-New Building	$2,210	$2,210	$2,210	$1,470	$3,870	C	$3,870	$2,110
Development Cost	1,300	1,350	1,440	1,090	2,380		2,380	1,580
Value-Old Building	300	600	1,190	230	600		600	230
TDR Purchase Cost	--	--	--	--	610		180	90
Value Gain	$ 610	$ 260	($420)	$ 150	$ 280		$ 710	$ 210

NOTE:

Individual building examples:

A-C Assuming a parcel in Subarea 1, Rent Area B.
D Assuming a parcel in Subarea 6, Rent Area C.

Development situation examples using transferable development rights (TDRs):

E Develop Building B assuming Building A is a designated historic building and using its TDRs.
F Develop Building B assuming Building C is a designated historic building and using its TDRs.
G Develop Building B assuming Building D is a designated historic building and using its TDRs.
H Develop Building D assuming another building like D is a designated historic building and using that building's TDRs.

(a) First read Examples A-D, the economics of individual buildings; then read the Examples E-H, the examples of development situations using TDRs.
(b) FAR = Floor Area Ratio, the number of square feet of building per square foot of land.
(c) The dollar amounts in this table are expressed per square foot of land. The cost per FAR of TDRs is equal to the Value Gain divided by the unused FAR.
(d) Alternative 3 only allows TDRs to be transferred to sites within 500 feet; thus Example G occurs often.
(e) There could be advantages in the new development situation to assembling similarly-priced TDRs from different buildings.

SOURCE: Recht Hausrath & Associates

TABLE G.8: VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDRs) FROM DESIGNATED HISTORIC BUILDINGS(a): ALTERNATIVE 4

	A	B	C	D	E	F	G	H
Subarea/Development Situation	1	1	1	6	Build B Save A	Build B Save C	Build B Save D	Build D Save D
FAR Existing Building(b)	2	4	8	2	4-2		4-2	2-2
Unused FAR	5	3	0	3	--	NO	--	--
TDR Cost per FAR(c)	$ 130	$ 110	--	$ 10	$ 130	TDRs	$ 10	$ 10
TDRs Purchased (d)	--	--	--	--	7	AVAILABLE	7	5
FAR-New Building	7	7	7	5	14	THROUGH	14	10
						SAVING		
Value-New Building	$1,940	$1,940	$1,940	$1,050	$3,870	C	3,870	$2,110
Development Cost	970	1,020	1,110	780	2,030		2,030	1,590
Value-Old Building	300	600	1,190	230	600		600	230
TDR Purchase Cost	--	--	--	--	940		90	70
Value Gain	$ 670	$ 320	($360)	$ 40	$ 300		$1,150	$ 220

NOTE:

Individual building examples:

A-C Assuming a parcel in Subarea 1, Rent Area B.
D Assuming a parcel in Subarea 6, Rent Area C.

Development situation examples using transferable development rights (TDRs):

E Develop Building B assuming Building A is a designated historic building and using its TDRs.
F Develop Building B assuming Building C is a designated historic building and using its TDRs.
G Develop Building B assuming Building D is a designated historic building and using its TDRs.
H Develop Building D assuming another building like D is a designated historic building and using that building's TDRs.

(a) First read examples A-D, the economics of individual buildings; then read the Examples E-H, the examples of development situations using TDRs.
(b) FAR = Floor Area Ratio, the number of square feet of building per square foot of land.
(c) The dollar amounts in this table are expressed per square foot of land. The cost per FAR of TDRs is equal to the Value Gain divided by the unused FAR.
(d) There could be advantages in the new development situation to assembling similarly-priced TDRs from different buildings.

SOURCE: Recht Hausrath & Associates

TABLE G.9: VALUE OF TRANSFERABLE DEVELOPMENT RIGHTS (TDRs) FROM DESIGNATED HISTORIC BUILDINGS(a): ALTERNATIVE 5

	A	B	C	D	E	F	G	H
Subarea/Development Situation	1	1	1	6	Build B Save A	Build B Save C	Build B Save D	Build D Save D
FAR Existing Building(b)	2	4	8	2	4-2	4-8	4-2	2-2
Unused FAR	10	8	4	4	--	--	--	--
TDR Cost per FAR(c)	$ 90	$ 70	--	$ 30	$ 90	--	$ 30	$ 30
TDRs Purchased (d)	--	--	--	--	5	5	5	4
FAR-New Building	12	12	12	6	17	17	17	10
Value-New Building	$3,320	$3,320	$3,320	$1,260	$4,700	$4,700	$4,700	$2,110
Development Cost	2,140	2,190	2,280	900	3,170	3,170	3,170	1,520
Value-Old Building	300	600	1,190	230	600	600	600	230
TDR Purchase Cost	--	--	--	--	440	0	160	130
Value Gain	$ 880	$ 530	($150)	$ 130	$ 490	$ 930	$ 770	$ 230

NOTE:

Individual building examples:

A-C Assuming a parcel in Subarea 1, Rent Area B.
D Assuming a parcel in Subarea 6, Rent Area C.

Development situation examples using transferable development rights (TDRs):

E Develop Building B assuming Building A is a designated historic building and using its TDRs.
F Develop Building B assuming Building C is a designated historic building and using its TDRs.
G Develop Building B assuming Building D is a designated historic building and using its TDRs.
H Develop Building D assuming another building like D is a designated historic building and using that building's TDRs.

(a) First read Examples A-D, the economics of individual buildings; then read the Examples E-H, the examples of development situations using TDRs.
(b) FAR = Floor Area Ratio, the number of square feet of building per square foot of land.
(c) The dollar amounts in this table are expressed per square foot of land. The cost per FAR of TDRs is equal to the Value Gain divided by the unused FAR.
(d) There could be advantages in the new development situation to assembling similarly-priced TDRs from different buildings.

SOURCE: Bud Hagemann & Associates

for Alternative 2 where TDRs are available equal to twice the unused FAR. This figure is shown in the row "TDR Cost per FAR". Because buildings A, B and C differ in size they have different amounts of TDRs to sell. For example, in Alternative 1, Building A has 12 unused FAR to transfer. The owner of the property would have to receive at least $100 per FAR, or a total of $1,200 to compensate for the foregone value gain from demolition and development on the site. Building B has only ten unused FAR to transfer, but the TDRs could be priced as low as $80 per FAR because the value gain foregone is only $850 per sq. ft. of land. The price of TDRs from Buildings C and D would be as low as $30 per FAR.

The other Alternatives show similar relationships. The owner of the smallest building (Example A) must ask the highest price while the owners of the medium size building (Example B) and the largest building (Example C) can afford to accept progressively lesser prices for their TDRs. In fact, in Alternatives 2 through 5, the demolition of Building C and development on its site is unprofitable, as the value foregone from the existing building is too large to be offset by the new building. In these situations, any amount the owner receives from the sale of TDR's would be a windfall. In other words, larger buildings can afford to sell their TDR's at a lower cost with the result that larger historic buildings are more likely to be saved by TDR provisions than are smaller buildings. Following this reasoning, it would also be possible that TDRs would be purchased from buildings that would not have otherwise been demolished.

The lower TDR values for Example D (as compared with the same size building in Example A) reflect the lower rents obtainable in that subarea. In other words, owners of historic buildings in premium rent areas are not likely to be able to sell their TDRs at prices sufficient to match foregone development profits as long as owners of historic buildings in lower rent areas have TDRs to sell.

TDR Impacts on Development Feasibility

Columns E through H list information from examples of development situations where TDRs are assumed to be utilized. The hyphenated FAR number (the second row) shows the size of the existing building on the parcel to be developed followed by the size of the building from which TDRs are being purchased. The TDR Cost per FAR is the minimum at which the owner of the designated building could afford to sell TDRs, as determined in Examples A through D. The TDRs Purchased are the amount (expressed in terms of FAR) that the building being constructed could use before exceeding the maximum FAR (except in Alternative 1 where, because no maximum FAR exists, it is assumed that all of the available TDRs from the contributing building are purchased and in Alternative 5, where an FAR of 17 is assumed for Subarea 1 development and an FAR of 10 is assumed for Subarea 6 development).

The Value-New Building and Development Cost figures are based on the FAR of the new building while the Value-Old Building reflects the characteristics of the existing building on the new building site. The Development Cost estimates include the costs of demolishing this existing building. The TDR Purchase Cost is the TDRs Purchased multiplied by the TDR Cost per FAR. Development feasibility is, as before, measured in terms of value gain. As set forth above, the criteria for whether the use of TDRs is likely is whether the Value Gain using TDRs exceeds the Value Gain from the building example without the TDRs.

Examples E and F allow comparison of the effect of the different costs of TDRs from large and small buildings. Example E represents the purchase of TDRs from Building A, and Example F the purchase from Building C. Both cases assume new development would occur on a site with the characteristics of Example B. Since the only difference between Building A and Building C is their size (FAR), the value gains calculated for Examples E and F demonstrate that the developer would be more likely to purchase the less expensive TDRs from the larger

building, Building C, than the more expensive ones from the smaller building, Building A. In Alternative 1, for example, the Value Gain to the developer assuming TDRs can be purchased at the minimum feasible cost from the larger building (Example F), is $1,210 per square foot of land, approximately twice the Value Gain from assuming TDR purchases from the smaller building ($630 per sq. ft. land in Example E). The other Alternatives show the same relationship. (It is not profitable, however, to demolish Building C in the other Alternatives. As a result any amount received for TDRs would be a windfall to the owner of this property.)

Examples G and H allow comparison of different locations to show the benefit they each enjoy from the purchase of TDRs. The increase in Value Gain from the use of TDRs is much greater in Example G (a building in the premium rent area) than it is for Example H (a building outside of the premium rent area). The increases in Alternative 1, for example, are $450 (from $850 to $1,300) for the Subarea 1 building (Example B compared to Example G) versus a decrease in gain ($250 to $220) for the Subarea 6 building (Example D compared to Example H). Considering this conclusion along with the earlier one regarding premium versus non-premium rent areas, the strategy would be to build in premium locations using TDRs from non-premium locations. Builders in non-premium locations would not be able to afford TDRs and owners of historic buildings in premium locations would have to charge a higher price to compensate for the greater value gain foregone./7/

ANALYSIS OF HOUSING POLICIES

Each Alternative, with the exception of Alternative 1, includes incentives to produce housing. These incentives allow additional office space to subsidize the cost of producing housing. Alternatives 4 and 5 also include requirements for providing housing as a condition of office development.

Real estate feasibility analyses were done to test the effectiveness of the various incentive provisions in producing housing. The analysis also considered how the housing requirements were likely to be met given the nature of the requirements and the incentives of each Alternative. These analyses are summarized in the following.

Effect of Incentives On Housing Costs

The model used for the real estate feasibility analysis of the prototypes (see Figure G.1) was also used to evaluate the impacts of the housing incentives of the Alternatives. For each Alternative, calculations were made to determine the potential cost (to a developer) of producing housing units, utilizing the office space bonuses (if any) provided by the Alternative. In other words, potential housing production costs were estimated by assuming that the increased value from the bonus office space would be used to subsidize the production of housing. The analysis of housing incentives was also used to test how the incentives would affect the cost of meeting a housing requirement.

The differences in housing production costs among Alternatives are summarized in Table G.10. The differences among Alternatives identify the effect of the incentives being tested in each case. The housing policies of the Alternatives are described in the text, Section V.B.

The market price for these units is likely to be higher than this "cost" amount. The market price would be set by other similar types of units on the market that were not produced using an office space bonus as a subsidy. The developer of the subsidized units would probably sell his units just below the market price. They would be more likely to sell quickly at this "reduced" price. They are unlikely to be sold as low as the subsidized cost amount since part of the "incentive" to produce housing is the additional return that can be earned because of the subsidy. Thus, both the consumer and developer would benefit from units sold at prices which are below market prices for comparable units, but which are above prices which would just cover production costs.

TABLE G.10: HOUSING PRODUCTION COSTS ASSUMING THAT OFFICE SPACE BONUSES FOR HOUSING (IF ANY) ARE USED TO SUBSIDIZE THE HOUSING (In Thousands of Dollars)

Location:	In Preferred Office Location (a)			In Non-Preferred Office Location (b)		
Size in Sq. Ft.:	640	1,000	1,500	640	1,000	1,500
Alternatives						
1	$165	$258	$387	$122	$190	$285
2	73	113	170	56	87	130
3	51	80	120	116	182	273
4	42	77	126	69	118	187
5	119	188	285	106	170	257

NOTE: The housing production costs shown here were calculated using the real estate feasibility model. They were done to test the potential effects of policies which provide bonus office space as an incentive for building housing. The absolute amounts are not as meaningful as the relative differences among Alternatives. These describe the impacts of incentives of various types. The housing policies of each Alternative are described in the text (see Section V.B).

(a) Assuming housing is built as part of a mixed office-residential project.

(b) A less expensive building on land for which office, hotel, etc. do not compete.

SOURCE: Recht Hausrath & Associates

Housing Production in San Francisco

The forecasts of housing development in the C-3 District 1990 to 2000 as shown in the text, (see Table V.B.9) reflect assumptions about the way in which the housing requirements of Alternatives 4 and 5 are fulfilled. Table G.11 shows the scenario which is part of the basis for the housing forecast. More description of the reasoning behind these scenarios is provided in the text (see Section V.B).

The top line of the table shows the number of units that would be required to meet the conditions of the two Alternatives which have housing requirements as a condition for building office space. The following four rows in the table show the four ways in which the requirements are assumed to be fulfilled. The differences between Alternatives 4 and 5 are the result of differences in both the housing requirement for office development and the incentives for developing housing which are included in each Alternative.

It is important to understand that the fulfillment of the requirement for a given number of units does not result in that number of units actually being produced. The sixth, seventh and eighth lines in the table show the units produced as a result of in-lieu contributions paid to a City housing fund. The differences between Alternatives in the number of units produced by contributions to the fund reflect the differences in the amount of the contribution in each case.

The last three lines in the table summarize the housing production in and out of the C-3 District related to the policies of the Alternatives. It should be remembered that these are not necessarily units that would otherwise not have been constructed. Consideration of the net addition of units is included in the Housing Impacts, Section V.D.

TABLE G.11: POSSIBLE SCENARIO OF HOUSING DEVELOPMENT RESULTING FROM C-3 DISTRICT POLICIES, 1990-2000

	Alternative				
	1	2	3	4	5
Housing Requirement For Office Development (a)	-	-	-	7,620	6,040
Housing Requirement Met By Contribution to City Housing Fund	-	-	-	1,520 (about 20 percent)	4,000 (most)
Housing Requirement Met By Rehabilitation of Existing Structures	-	-	-	1,400	400
Housing Constructed In C-3 District Excluding Units Constructed By City Housing Fund	300	2,000	800	3,000	500
Housing Constructed Elsewhere In City To Meet C-3 District Housing Requirement	-	-	-	1,700	1,140
Housing Built With C-3 District Contributions To City Housing Fund					
Within C-3 District	-	-	-	500	500
Elsewhere in City	-	-	-	500	500
Housing Rehabilitated With C-3 District Contributions to City Housing Fund	-	-	-	500	500
Total Housing Built In C-3 District	300	2,000	800	3,500	1,000
Housing Built Elsewhere In City to Meet C-3 District Housing Requirement	-	-	-	2,200	1,640
Housing Rehabilitation Because of C-3 District Policies	-	-	-	1,900	900

TABLE G.11: POSSIBLE SCENARIO OF HOUSING DEVELOPMENT RESULTING FROM C-3 DISTRICT POLICIES, 1990-2000 (Continued)

NOTE: These estimates of housing development are based on analysis of the housing incentives and requirements of the five Alternatives. The estimates presented here should be viewed as describing a possible scenario developed primarily for purposes of highlighting the differences among Alternatives. The housing development shown here would not all represent net additions to the housing stock in San Francisco (see Section V.D. and Table V.D.3). Some would represent units which would be built elsewhere in the City if not in the C-3 District.

(a) For Alternative 4, estimated at one unit per 1,000 sq. ft. of space in new office buildings. For Alternative 5, estimated assuming 250 sq. ft. space in new office buildings per employee, 40 percent residing in San Francisco, and 1.8 workers per household.

SOURCE: Recht Hausrath & Associates

FORECASTING C-3 DISTRICT OFFICE SPACE

Overall Matching Process

The product of the real estate feasibility analysis, incorporating the analysis of the prototype buildings and of the TDR and housing production policies of the Alternatives, was a description of the supply of office space that could be provided in the C-3 District, considering the physical parameters and development costs associated with each Alternative. The amount of office space developed, however, is not solely a function of what is allowed under each Alternative. It depends on the demand for office space from the business activities deciding to locate in the C-3 District.

A baseline forecast of employment growth by business activity between 1981 and 2000 was prepared as part of the employment analysis. (See Appendix H, pp. H.18 - H.34.) The baseline employment forecast is

nterpreted as the demand for space, assuming continuation of real estate market conditions that have prevailed since the early 1960's. n terms of space supply and rents, this assumption implies that sites n the core of the C-3 District (essentially the financial district) would continue to be more intensively developed; the boundaries of this core area would expand as sites in the prime areas become more scarce; some arge-scale single-tenant and speculative office development would occur on large sites in more outlying areas; and that, given the long-term supply potential, rents would remain at constant levels, in real terms.

These real estate market conditions would be the likely outcome of Alternative 1 policies in the C-3 District. Therefore, the baseline employment forecast is the forecast for Alternative 1.

The effects of the other Alternatives (Alternatives 2 - 5) on future potential office space supply in the C-3 District would be to change some of these real estate market conditions. These changes would be reflected in the availability of office space in different locations and in differences in the costs of development.

The demand for office space was compared with the potential supply of office space to produce a forecast of office development by subarea for each Alternative. The baseline employment forecast for each business activity and function was always the starting point. The process of "matching" employment with space was done from the perspective of businesses of various types evaluating location options in the C-3 District relative to other locations.

Employment densities for each business activity (see Table H.2) were the means by which the connections between employment and space were made. Employment densities were not assumed to change over time, except in relation to a constrained office supply situation (as described later in this subsection). In addition, a long-term average office vacancy rate of five percent was assumed in the office space forecasts. Consequently, the amount of space forecast to be developed exceeds the amount demanded by five percent, in all Alternatives.

Appendix H contains a detailed discussion of the "matching" process used to forecast the development pattern for each Alternative and employment by business activity (see pp. H.35 - H.48). Figure H.3 (repeated on the next page) is a diagram of the process, indicating the contributions of both supply and demand factors to the forecasting procedure. The reader is encouraged to review this section of Appendix H because it is critical to understanding how the forecasts of office development under each Alternative were completed.

Real Estate Market Interactions

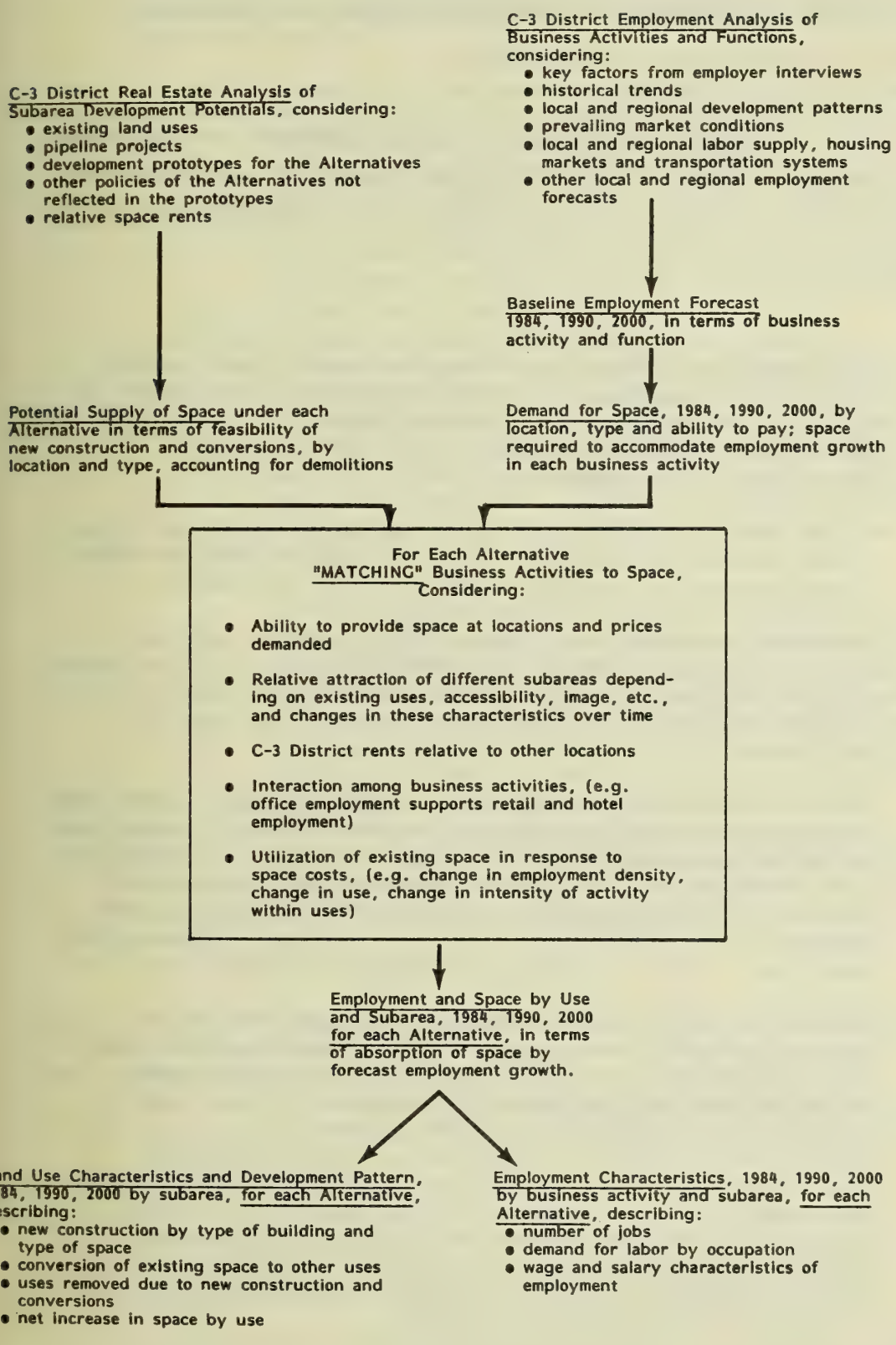
The box in the center of the diagram in Figure H.3 describes the process of "matching" business activities and space for each Alternative. The approach was to consider all of the real estate market interactions which could occur because the supply of newly developed space (location, type, and cost) would vary among Alternatives. The factors listed in the box in Figure H.3 identify some of the important considerations.

In practice, a series of judgements were made as to how businesses of different types (demand) would respond to various supply conditions based largely on the nature of their preferences for a C-3 District location relative to other location options. Consideration was also given to the responses of landowners, developers, and lenders (financial institutions) to various policies, both initially and over the long term.

The following discussion describes the dynamic process of real estate market interactions which would occur because of changes in C-3 District land use policies. It provides further description into how the development forecasts were prepared from a real estate market perspective.

Since Alternative 1 policies were judged to be similar to those assumed in the baseline employment forecast, Alternative 1 was the starting point for the forecasts for the other Alternatives. Since Alternatives 2 through 5 have different policies regarding the supply of C-3 District

FIGURE H.3: DIAGRAM OF PROCESS OF DEVELOPING C-3 DISTRICT EMPLOYMENT AND LAND USE DEVELOPMENT FORECASTS FOR THE FIVE ALTERNATIVES



SOURCE: Recht Hausrath & Associates

space, each was evaluated relative to Alternative 1 in considering whether and how the different policies would affect the amount and pattern of C-3 District office development.

The real estate market interactions which were considered are described by the following. A diagram of the dynamic process of real estate market adjustments to changes in land use policies is provided at the end of this discussion.

- The policies of an Alternative could affect the size of buildings, the availability of sites for development, and/or the costs of development. These effects were determined in the construction feasibility analysis (described in Appendix D) and the real estate feasibility analysis (described previously in this Appendix).

- To the extent that the costs of development would be higher and/or the size of buildings would be smaller, the feasibility of development at constant rents would be decreased.

- Decreased feasibility would mean that, initially, less space would be developed in the locations affected and of the types of space affected. Less development could also result from policies which directly affect the availability of sites for development.

  Financial institutions considering lending for new construction may choose to wait for evidence that rents will rise enough to justify construction under the changed policies. Landowners and developers may go slow on development decisions and land sales, choosing to wait and evaluate how rents might increase, in an attempt to maintain or improve their expected value gain under the prior set of land use policies.

- Competition for available space (of the types and at the locations affected) would be greater because less new space would be supplied. Rents would be bid up to the extent that there are tenants (businesses) who are willing and able to pay higher rents for C-3 District space.

  The process of rising rents occurs slowly over time. Faced with fewer options, tenants would evaluate whether they are willing to pay higher rents for C-3 District locations relative to the rents for other locations. These decisions occur over time as prospective tenants consider the C-3 District and as the leases of existing tenants expire.

- As competition increases and tenants evaluate whether they are willing to pay higher rents, three types of situations are likely to result:

    1. Present and prospective tenants with strong demand for the most preferred office locations in the C-3 District would pay more for that space. Employment densities would increase to partially accommodate higher rents; thereby reducing the demand for new space. The extent to which employment densities would be higher depends on the increase in rents and the sensitivity of firms to higher space costs.

    2. Present and prospective tenants who are unwilling or unable to pay higher rents and compete for the more preferred office locations would choose other locations within the C-3 District. Rents would be bid up in these more peripheral locations. Employment densities would increase to accommodate higher space costs, thereby reducing demand for new space.

    3. Present and prospective tenants for lower rent C-3 District office space would choose locations outside the C-3 District or take steps to increase employment densities to accommodate higher space costs. This group of tenants would be the least willing and least able to pay higher rents and the most likely to choose a location outside the C-3 District.

- As rents increase the feasibility of development under the new policies would also increase and eventually more space would be built. Because of all of the adjustments or adaptations to be made, new policies could have less effect over the long term than during the shorter term period following their adoption.

- Because of changes in policies, it is likely that in most cases less space would be built within any given time period. As firms adjust to higher rents by increasing employment densities, the demand for additional space is reduced. Further, as rents rise, the demand pool will become smaller as some present or prospective tenants choose locations elsewhere.

  Less total space would be built ultimately to the extent that the policies of an Alternative reduced the total future potential supply by reducing the availability of sites.

- Rents would be higher than they otherwise would be to the extent that tenants are willing and able to pay more for a C-3 District location. Whether rents increase enough to fully

compensate for the reduced feasibility depends on the specific circumstances and cannot be generalized across the Alternatives.

It is important to understand that rents will be higher only to the extent that tenants are willing to pay them. The amount of increase in rents does not depend on an increase in costs or on a decrease in development feasibility. The rent that tenants are willing to pay depends on the alternative locations available. The minimum amount that they would have to pay for a certain location depends on the competition for that location and what others are willing to pay. Consequently, increased costs do not necessarily mean that rents can be raised to maintain land value even if property owners and developers attempt to do so. Further, rents could increase to a higher level than implied by increased costs or reduced feasibility.

It was concluded that, in general, rents would be higher under Alternatives 2, 3, 4 and 5 as compared to Alternative 1. How much higher would vary among these four Alternatives. Within each Alternative, changes in rents would also vary among types of locations and subareas within the C-3 District.

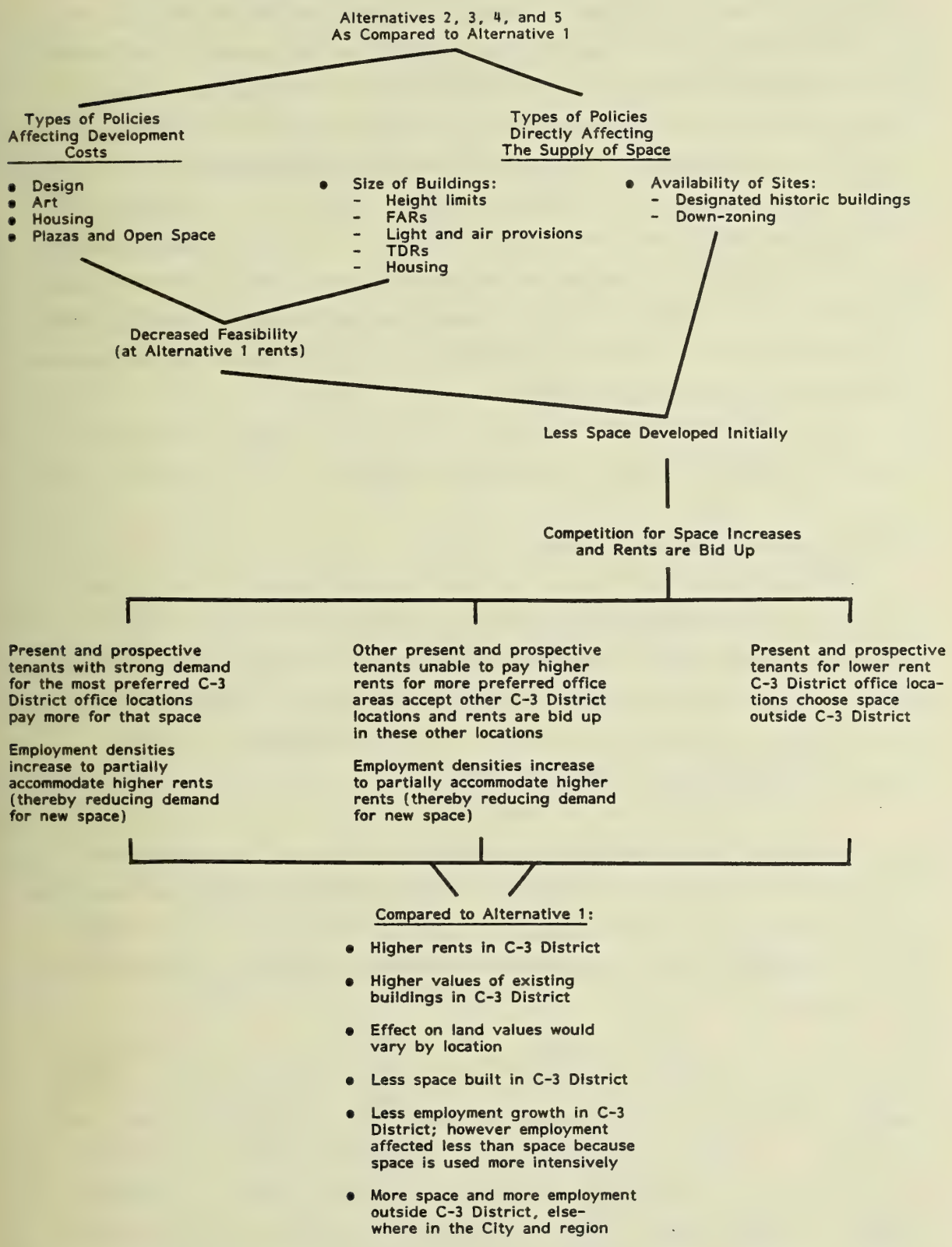
Generally, rents would be more likely to increase to cover or even more than cover reduced feasibility in the more preferred areas for office activities. Demand for these locations would be strongest and the tenants the most willing to pay more to compete for a location there. In locations of weaker demand where tenants are more sensitive to rents or have more options, rents are less likely to increase to cover the full impact in terms of reduced feasibility.

- Generally, the values of existing buildings in the C-3 District would be higher because of a reduced supply of new space and higher rents.

- Land values, the value of a site for development, would also be affected. If rents rise to fullly compensate for decreased feasibility, then land values would not be affected. If competition for certain locations results in even higher rents because of greater scarcity, rents and land values could be higher. However, if rents do not rise to fully cover the decreased feasibility, land values would be lower. Probably all of these situations would occur.

The diagram in Figure G.2 summarizes the process of real estate market adjustments to changed land use policies. All of the aspects of this process were considered in preparing the forecasts of future development under Alternatives 2, 3, 4, and 5 as compared to Alternative 1.

FIGURE G.2: DYNAMIC PROCESS OF REAL ESTATE MARKET ADJUSTMENTS TO CHANGED LAND USE POLICIES FOR OFFICE DEVELOPMENT



SOURCE: Recht Hausrath & Associates

As described above, the impact of changing land use policies on the amount of office development, rents, and land values depends on the specifics of the policies and the time frame for the analysis and would vary among locations within the C-3 District. It is not possible to provide simple generalization as to the conclusions of this analysis. The text descriptions of the forecasts of office development 1990 to 2000 describe the impacts of the Alternatives on rents and on the amount and location of development (see Section V.B). Another subsection of the text considers long term implications beyond 2000. In the summary section of this report (Section I), the Alternatives are compared from the perspective of C-3 District property owners in terms of impacts on land values and building values.

OTHER ASPECTS OF THE LAND USE ANALYSIS

Other Uses in Office Buildings

High-rise office buildings usually have other uses in lower floor space./8/ These other uses are typically small retail shops, restaurants or snack bars and branch banks. In the real estate analysis, it was assumed that some of the space in office buildings would be devoted to these other uses.

For the 1981 to 1984 period, the distribution of uses in new office buildings was based on Department of City Planning records of projects under construction. Retail space in new office buildings was about 404,000 gross sq. ft., or about 5.4 percent of the total new space in office buildings./9/

Branch banks are also commonly part of office projects. Only a small amount of new branch bank space is specified for projects under construction. A larger amount would be demolished on the sites chosen for these projects. Therefore, for the 1981 to 1984 period, an additional amount of branch bank space is assumed to be built as part of office projects, equal to about two percent of the total new office space built./10/

For the balance of the pipeline projects (approved, under formal review and in Yerba Buena Center) it was assumed that, overall, five percent of the total space in new office buildings would be retail space and about two percent of the total space would be branch bank space. All the space projected according to these assumptions would be absorbed by forecast employment growth in these activities between 1981 and 1990.

For the period 1990 to 2000, assumptions were made about the amount of retail and branch bank space that would be developed in association with future office projects. An average ratio of new retail and branch bank space in office buildings to new office space was determined for each subarea. The total space in new office buildings forecast for each of the Alternatives combines the space estimated for all of these uses. As in the analysis for the prior periods, the net amount of space in retail and branch bank uses (adding free-standing retail space and subtracting projected demolition in these uses) was matched with forecast employment growth to determine the amount of space absorbed between 1990 and 2000. In some cases, it was estimated that employment densities would increase to compensate for the smaller supply of new retail or branch bank space in office buildings.

For all Alternatives the assumptions about the amount of office building space devoted to retail and branch bank uses were the same. The proportions varied by subarea, and reflect an average ratio over many potential development projects in a subarea:

Percent of Total New Space in Office Buildings in Other Uses
(Average Over Subarea)

Subarea	Retail	Branch Bank
1	7.5%	2.5%
2	7.5%	2.5%
3	2.5%	1.0%
4	7.5%	2.5%
5	12.5%	2.5%
6	17.5%	2.5%
7	12.5%	2.5%

For this latter period, larger proportions of retail space are assumed for new office projects because of the increasingly limited supply of suitable sites in prime retail locations for new free-standing retail development. Also, as more office development occurs in areas more distant from the financial district and retail core, supporting activities, such as shops and eating places, will be part of the package to attract office tenants. The ratios for Subareas 5, 6, and 7 reflect the probability that more mixed-use projects would be developed in these areas, in keeping with their high-intensity, mixed use character./11/

Retail and Hotel Development

New retail and hotel development cannot be predicted from the real estate development feasibility model as readily as new office development. The real estate analysis of these uses considered several other factors:

- the availability of sites in suitable locations
- the different types of retail and hotel development likely to occur, depending on location; e.g. first class hotel or motor lodge; department store or small convenience shops.
- for retail development, the amount and location of new space in office buildings
- opportunities for upgrading existing retail and hotel space
- ability to absorb increased activity in existing retail and hotel space

Retail development in particular would not be as directly regulated by the Alternatives as would office development. Hotel development would be somewhat more directly affected by policies limiting high-rise development in certain areas.

Forecasts of retail sales and tourist activity in the C-3 District were the first steps to forecasts of retail and hotel development. Appendix H, Employment Analysis, describes the methodology and assumptions for

these forecasts. The forecasts considered base case judgements regarding some of the factors outlined above. The retail sales and tourism forecasts were expressed in terms of employment growth.

Based on employment density assumptions, employment forecasts were converted into demand for space. This demand was subsequently assessed against the real estate factors and any implications of the Alternatives, such as the amount of new retail space in office buildings, to complete the forecasts of changes in retail and hotel space. The final forecasts, especially for retail development, incorporate different degrees of new development, upgrading and increased activity (sales and employment) in existing space.

Other Uses

The types of space remaining to fill out the C-3 District land use pattern are cultural, institutional, educational and miscellaneous other space, industrial, warehouse and automotive space, and parking. The real estate analysis of these uses treated them as subordinate to office development in the C-3 District.

No new cultural, institutional or educational development was forecast, with the exception of the cultural uses proposed for Yerba Buena Center. Market demand is generally not the principal consideration in new development of this type. The adequacy of existing facilities, traditional locations, and organizational preferences are more important and cannot be predicted in the same way that the feasibility of new office, retail or hotel development can.

The employment growth that is forecast to occur in educational and non-profit activities would take place in older existing office space. To account for the space occupied by various types of activities, this is indicated as a change in land use, from office to cultural/institutional/-educational. (See supplemental tables at the end of this appendix: Changes in C-3 District Commercial Space by Use, and Changes in C-3 District Office Space by Subarea). Educational and non-profit organ-

izations generally will not pay as high rents as traditional office users; therefore, this type of change in use would not occur in those Alternatives that constrain the development of new or converted office space. As mentioned in the text, Land Use and Real Estate Development Impacts, the demand for office space would be too strong in these Alternatives to allow freeing some of it for occupancy by educational or non-profit activities. Consequently, forecast employment growth in these activities would not occur in the C-3 District, under some Alternatives.

Some new parking facilities would be built in the C-3 District. Besides the parking proposed for Yerba Buena Center, other future parking (amount and location) depends on transportation policies of the Alternatives.

In summary, most of the analysis of these other uses began from the assumption that they would be subject to the real estate market conditions created by the feasibility of new office development under each of the Alternatives. The only exception to this would be when policies of the Alternatives specifically addressed these uses, such as Alternative 4 policies regarding industrial buildings. Therefore, most of what happens to these uses is either demolition or conversion, in varying degrees, depending on the Alternative.

Conversion to Office Use

The conversion of existing space to higher-rent paying uses is an ongoing process in the downtown real estate market. For the purposes of this study, conversion refers to a change in the use of existing space, from a low intensity non-office activity (few employees per square foot and minimal improvements) to office activity, through physical upgrading and a change in tenants./12/ Conversion occurs when there is no near term economic gain to a property owner in tearing down an existing building and redeveloping the site, but office demand is strong enough to support rents for the existing space that justify remodeling and conversion to office use.

To estimate the conversion of space to office use, three types of C-3 District space were defined as the potential conversion supply: industrial/warehouse space, auto repair shops and garages, and miscellaneous other space that was largely vacant, according to the Downtown EIR Land Use Inventory. Uses besides these mentioned could be converted to office space. The conversion of the old Sloane's furniture store (retail space) is a current example. The estimates used for the real estate analysis focus on those uses that have historically been subject to conversion and which would come under increasing pressure in the future, because of their location and other market factors. Over the long term, these uses are the most likely alternate sources of office supply. The forecast economic growth in the C-3 District will support continued use of existing retail, cultural, institutional and educational space.

Three considerations were the basis for estimating the amount of office space supplied by conversion of existing space in other uses. First, the estimates considered the demand for lower cost office space in older buildings. The demand for converted space was particularly sensitive to the amount of new office space provided, by subarea. Relative preferences for converted space in different subareas were also taken into account. Second, the total square footage in the uses identified as candidates for conversion and the distribution of these uses by subarea were important considerations. Knowing the pool from which converted space could be supplied provided a threshold for measuring realistic rates of conversion by use and subarea. Third, the estimated amount of these uses demolished for new construction, by subarea, was taken into consideration. If demolition and redevelopment offered a higher return to the property owner, conversion would not occur.

Using all of these considerations, a base case estimate of conversion was developed, for each use and subarea. The base case estimate, in terms of an annual amount of gross square feet of space converted between 1981 and 2000, required initial judgements about the total amount of potential conversion and the rate of conversion, by location. These base case assumptions were altered according to the different demand and/or policy considerations of the Alternatives.

In the base case, about 60 percent of the industrial/warehouse space in each subarea would be either converted or demolished between 1981 and 2000. The subareas were distinguished by their distance from the premium office area. The central subareas (Subareas 1, 2, 6 and 7) were assumed to have higher rates of conversion in the near future and slower rates of conversion towards the end of the forecast period. The pattern for the outlying subareas (Subareas 3,4,5) was assumed to be the opposite, slower rates in the first years of the period, with conversion gradually increasing over time.

The space in automotive uses (repair shops and garages) assumed to be available for conversion is located in Subareas 3 and 5. The space would become a source of office space after 1984. By 2000, approximately 50 percent of the 1981 estimate of this type of space would be converted to office use. The annual rate of conversion was assumed to increase over time. These assumptions also were modified for the different Alternatives.

Space identified in the Land Use Inventory field work in the "other" category included a variety of different uses, not all of which are suitable for conversion to office use. Examination of the Inventory records, however, indicated that portions of the space in the "other" category were vacant or warehouse uses and thus were potential candidates for upgrading to office use. In several instances, the "other" space was vacant in 1981 because it was in transition from one use, such as retail or upper-story office in an older building, to another. Examples are the Sak's Fifth Avenue department store on Geary, the Penney's department store and the upper floors of the Lincoln Building at Fifth and Market Streets.

For each subarea, an estimate of the amount of this potential conversion space was prepared, ranging from none in Subarea 4 to over 600,000 gross sq. ft. in Subarea 6 (where about two-thirds of the "other" space identified in the 1981 Land Use Inventory is estimated to be vacant). This space would be either converted or demolished between 1981 and 2000. As with industrial/warehouse space the annual rates of

change were assumed to differ between the central and outlying subareas, with conversion in the earlier years occurring at a faster rate in the central subareas and at an initially slower, but gradually increasing, rate in the outlying subareas.

Forecast demolition (see following discussion) takes precedence over conversion of these uses. Industrial/warehouse, automotive, and miscellaneous vacant space are land uses that would be under pressure from expanding new development. Forecast demolition indicates that some of these sites would be more valuable with a new building; the balance can be assumed to generate greater returns with some upgrading and a change in tenants./13/

Based on these assumptions and calculations, conversion to office use was estimated for the 1981-1984 period, the 1984-1990 period and the 1990-2000 period for all Alternatives. The forecast is the same to 1990, for all Alternatives. Tables G.21 and G.23 in the supplemental tables at the end of this Appendix show the estimates for the first two periods, by subarea.

Between 1990 and 2000, the amount of conversion varies by Alternative. The assumptions used to calculate estimated conversion reflect both the market demand consequences of the Alternatives' effects on new development, and how some Alternatives directly affect the ability to convert existing space to office uses.

For Alternatives 1 and 2, the 1990 to 2000 period would be a continuation of the 1981 to 1990 trend, with the annual rate of change (decrease) in these uses accelerating in the outlying subareas and slackening somewhat in the central subareas (as suitable conversion property becomes more scarce). The only difference in the amount of office space supplied through conversion in these two Alternatives results from different estimates of demolition. The differences are slight. Tables G.25 and G.27 show the final estimates of conversion to office, by subarea.

In Alternative 3, the market demand for converted office space would increase because of constraints on new development, relative to Alternatives 1 and 2. Therefore, conversion would increase. The assumption for this forecast is that, by the year 2000, more of the existing space (about 10 percent more in each subarea) would either have been converted or demolished. Table G.29 shows the estimate of conversion for Alternative 3. The amount is not larger because Alternative 3 would also result in a larger amount of these uses being demolished than would either Alternative 1 or Alternative 2.

In Alternative 4, the assumptions used to forecast conversion reflect the prohibition on conversion of "viable" industrial buildings, down-zoning in parts of Subareas 3 and 5 and the cost of the requirement to provide housing. Conversion would be limited in all subareas as a consequence of these policies. It was assumed that conversion in Subareas 3 and 5 would be only about 10 percent of the conversion occurring under Alternative 1. In all other Subareas, conversion would be about 20 percent of the amount converted under Alternative 1. The constraint would be greatest in Subareas 3 and 5 because most of the industrial space that is a potential source of converted office space in the C-3 District is located in these subareas. These are also the areas in which most of the down-zoning would apply. Moreover, the generally weak market demand for office space in these subareas would not support the increased rents necessary to offset the costs of the housing requirements.

Table G.31 at the end of this Appendix shows the 1990-2000 forecast of conversion under Alternative 4. The reduced amount of conversion in Alternative 4 reflects the intent of the policies to prevent it, at the same time indicating that "informal" conversion would occur when market demand for a lower cost source of office space is high, as it would be in this Alternative./14/

In Alternative 5, large parts of Subareas 3 and 5 would be re-zoned R-C; conversion to office use is not generally permitted under this zoning designation./15/ The first step in estimating the amount of

space that would still be converted in these subareas was to determine how much industrial/warehouse, automotive and "other" space was outside the R-C areas. The distribution of these uses among R-C and non-R-C blocks was determined./16/ It was then assumed that no conversion would occur in R-C areas. Because of this reduced supply, however, the pressure for conversion in non-R-C areas would increase. Consequently, the estimates of conversion in Subareas 3 and 5 reflect an accelerated rate of conversion in a limited part of the subarea. In all other subareas, as in Alternative 3, market demand for converted office space would be high. For the Alternative 5 forecast, it is therefore assumed that, by the year 2000, 80 percent of the industrial space in Subares 1, 2, 4, 6 and 7 would have been converted or demolished (as compared to about 60 percent in Alternatives 1 and 2). Similarly, about 10 percent more space in the "other" category would be under this pressure in Subareas 2, 6, and 7.

Table G.33 shows the final estimates of space converted to office use under Alternative 5, by subarea. The amount remains high in Subarea 5 because the R-C zoning designation would not cover those blocks where most of the potential conversion supply is located.

Demolition of Existing Space

Before 1990, the amount of space forecast to be demolished, by use, was determined for the specific sites proposed for development. The Downtown EIR Land Use Inventory was consulted for the amount of space by use on these development sites. Tables G.20 and G.22 at the end of this Appendix show the resulting totals for demolition by use.

For the 1990 to 2000 period, the real estate feasibility model generated lists of probable development parcels for each subarea and Alternative. The Downtown EIR Land Use Inventory lists the existing land use on each of these parcels. The feasibility model was not designed to predict C-3 District development on a parcel-by-parcel basis, however. Therefore, to determine the amount of space and the type of uses likely to be demolished, a range of parcels at the top of the list (in terms of

value gain ratios) was identified, generally about two times greater than the forecast amount of new office development. Prime retail and hotel locations were also considered./17/

For each subarea, the amount of existing space demolished for new construction was the amount reflected in the value gain ratios, corresponding to the forecast amount of new development. The mix of types of uses demolished was determined based on the distribution for the broader range of parcels. This methodology is the same as that used to identify architectural resources threatened by new development. (See Section V.H.) It reflects the presumption that future projects will come from somewhere within this range of sites, although not necessarily strictly from the top of the list. The supplemental tables at the end of the Appendix show the forecasts of space demolished by use. (See Tables G.24, G.26, G.28, G.30 and G.32).

NOTES - Land Use and Real Estate Development Analysis

/1/ While using relatively low rent levels for post-1945 existing building underestimates their annual rental income, this is not critical to the working of the feasibility model as their large size (high FAR) prevents their being selected for demolition.

/2/ The computer analysis was done for each parcel in the C-3 District for each Alternative. The calculations followed the description given in Figure G.1. The Downtown EIR Land Use Inventory data base identified the land area of each site and the gross square footage of an existing building(s) on the site.

/3/ The value gain estimates based on general market information are useful indicators of market behavior for predicting speculative (non-owner-occupied) office development. Because a variety of other factors can enter into the investment decision for owner-occupants, general market data provide a less accurate picture of the behavior of this type of office developer. The value gain calculations are, nevertheless, indicative of some of the considerations leading to this type of development. The real estate feasibility of hotel, retail and other types of new developments is difficult to predict from generalized market data. Other approaches, with more explicit consideration of sites in suitable locations, are preferable, though the real estate feasibility model does shed some light on the availability of sites and other supply factors. The methodologies and assumptions used to complete the space supply forecasts for these other uses are discussed later in Appendix G.

NOTES - Land Use and Real Estate Development Analysis (Continued)

The computer analysis did not aggregate parcels. The real estate feasibility calculations were carried out for each parcel, as listed in the Downtown EIR Land Use Inventory. It is probable that most development projects would involve the assembly of several adjacent parcels. Nevertheless, comparison of the Alternatives is valid since the method of analysis is consistent among all five.

/4/ The conclusions of the analyses of the incentives to preserve architectural resources and to produce housing are described in separate subsections of the text (see Section V.B). Background on the analysis is described in this Appendix.

/5/ The investment tax credit established in the Economic Recovery Tax Act of 1981, to encourage preservation of historic and architecturally significant buildings (and amended in 1982) allows a 25 percent tax credit, with 15-year depreciation of 87.5 percent of the costs, for the substantial rehabilitation of certified structures. To qualify for the 25 percent tax credit, the building must be listed in the National Register of Historic Places or certified as eligible for listing. The project must conform to specific rehabilitation standards and conformance verified before the credit can be claimed.

/6/ The calculations are all made per the equations of the real estate feasibility model in Figure G.1 except for the addition of a termination cost. The FAR assumed for new buildings (without TDRs) is assumed to be the basic FAR without any bonuses. All dollar values in the tables are expressed per sq. ft. of land.

For Alternative 2, the bonus 100,000 sq. ft. of TDRs available for retention of an "A" building is not included in these calculations. Similarily, the TDRs potentially available in Alternatives 4 and 5 to facilitate rehabilitation of the historic building are not included.

/7/ In Section V.B. of the text and later in this Appendix, it is mentioned that greater constraints on the size of buildings and/or higher development costs usually result in higher office rents. Higher rents would not alter the general conclusions from Tables G.5 - G.9, because higher rents raise both the price of TDRs based on value gain foregone, and the value of the TDRs.

/8/ A sample of office buildings in the C-3 District, taken from the Downtown EIR Land Use Inventory, indicated that, on average, approximately 10 percent of the space in these buildings was occupied by non-office uses.

/9/ This estimate of retail space in office buildings includes what is probably lower floor retail and restaurant space, as well as the Crocker Galleria. It does not include the free-standing retail project under construction, the Nieman-Marcus department store.

NOTES - Land Use and Real Estate Development Analysis (Continued)

/10/ The result of the assumption is that a small amount of the space specified for office use in projects under construction is set aside for occupancy by branch bank activities. After accounting for branch bank space demolished to make way for new construction, the net amount projected according to these assumptions matched the amount that would be absorbed by forecast growth in branch bank employment over this period.

/11/ This assumption is reinforced by the mix of uses in pipeline office projects that specify retail uses. In Subarea 5, the ratio of retail to office is 15 percent and in Subarea 7 (counting only one project) the ratio is 10 percent. These ratios were calculated exclusive of major retail development associated with new office development, such as the Crocker Galleria and the proposals for Yerba Buena Center.

/12/ Conversion should be distinguised from upgrading, which is another ongoing process in the downtown real estate market. Upgrading does not result in any change in use or net addition of space. It is an investment in existing space that is reflected in this report in terms of increased employment, without the usual net addition of space.

/13/ In Subarea 1, this approach led to the conclusion that none of the space in the "other" land use category would be converted. More was projected to be demolished than was estimated to be available for conversion. This conclusion reflects the strong market demand pressures for new office development in Subarea 1. In this area, demolition and new construction make more economic sense than conversion.

/14/ "Informal" conversion refers to changes in use, accompanied by minimal upgrading. For example, a vacant warehouse in fairly good condition might simply be taken over for basic office activities with the addition of a few desks and file cabinets.

/15/ Conversions could be permitted in an R-C zoning district depending on review on a case-by-case basis. For purposes of this analysis it was assumed that conversion to office use was not generally permitted since the orientation of the R-C district is to provide commercial uses to serve the residents in the area.

/16/ Analysis of the distribution of the uses vulnerable to conversion among R-C and non-R-C portions of the subareas indicated the following: in Subarea 3, about 60 percent of the industrial space would be in the R-C area, and 80-85 percent of the automotive and "other" space would be re-zoned R-C; in Subarea 5, only about 15 percent of the total space in these uses would be in the R-C portions of the subarea.

NOTES - Land Use and Real Estate Development Analysis (Continued)

/17/ In some subareas, such as Subareas 3 and 4, the methodology was somewhat different. Both of these areas have large amounts of vacant or near-vacant parcels relative to the amount of new development forecast. It is also probable that development would consist of centralized (as opposed to scattered) projects. In these cases, the mix of uses demolished, as determined by a distribution from a broad range of parcels, did not appear to be a major, issue, at least in the 1990 to 2000 time period.

SUPPLEMENTAL TABLES AND MAPS FOR LAND USE AND REAL ESTATE ANALYSIS

Introduction to Supplemental Tables

The tables which follow provide detailed information to accompany the land use and real estate development sections (IV.B and V.B) of this report. Together, the tables show all the information related to land use in the C-3 District from 1981-2000, for all Alternatives.

The first set of tables, G.12-G.19, shows the distribution of space by use and subarea for 1981, 1984, 1990 and the five Alternatives for 2000. The first two tables also appear in the text, but are repeated here for continuity.

Tables G.20 through G.33 show the changes in space for all time periods and Alternatives. There are two tables for each period and Alternative. The first shows changes in space by use for the entire C-3 District, covering such topics as new construction, demolition and conversion. The table immediately following focuses on changes in office space, showing the detailed changes by subarea: new construction, occupancy by other uses, demolition and conversion.

For example, Table G.20 shows the changes for the 1981-1984 period in space by use, for the entire C-3 District. Table G.21 shows more detail for office use. The first number in the office column in Table G.20 is the number in the total column in Table G.21. The rest of the top line of Table G.21 shows how this total is distributed by subarea.

All numbers in the tables are thousands of gross square feet. The range of amounts of space among uses and subareas is so large that rounding any further would result in the loss of important information. The figures in the table are thus not meant to imply an unusually high degree of accuracy. As they stand now, the totals, changes, and distributions are consistent from one table to the next.

TABLE G.12: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1981(a) (Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District	Percent of Total
Office(b)	37,162	3,948	904	4,626	2,714	4,594	1,380	55,328	57.5%
% of C-3 Total	67.2	7.1	1.6	8.4	4.9	8.3	2.5	100.0%	
Retail	1,706	207	430	415	1,013	3,372	613	7,756	8.0%
% of C-3 Total	22.0	2.6	5.5	5.3	13.0	43.7	7.9	100.0%	
Transient Hotel	1,921	--	249	31	5,024	1,936	61	9,222	9.5%
% of C-3 Total	20.8	--	2.7	0.3	54.5	31.0	0.7	100.0%	
Residential Hotel	160	--	162	74	2,205	194	53	2,848	3.0%
% of C-3 Total	5.6	--	5.6	2.6	72.4	6.8	1.9	100.0%	
Housing	64	12	831	276	2,167	-	730	4,080	4.2%
% of C-3 Total	1.6	.3	20.4	6.7	53.1	-	17.9	100.0%	
Cultural/Institutional/ Educational/Other	1,097	163	871	183	2,179	936	889	6,318	6.6%
% of C-3 Total	17.3	2.6	13.8	2.9	34.5	14.8	14.1	100.0%	
Industrial/ Warehouse/ Automotive	153	637	2,324	105	1,167	32	47	4,465	4.6%
% of C-3 Total	3.4	14.3	52.0	2.4	26.1	0.7	1.1	100%	
Parking	1,053	1,108	1,643	299	1,250	890	108	6,351	6.6%
% of C-3 Total	16.6	17.4	25.9	4.7	19.7	14.0	1.7	100%	
TOTAL	43,316	6,075	7,414	6,009	17,719	11,954	3,881	96,368	100.0%
Percent of Total	45.0%	6.3%	7.7%	6.2%	18.4%	12.4%	4.0%	100.0%	

(a) Based on Downtown EIR Land Use Inventory (See Appendix C.)
(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories. They occupy approximately 10 percent of the space in office buildings.

SOURCE: Recht Hausrath & Associates

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District	Percent of Total
Office(b)	42,666	4,369	1,422	4,635	2,877	4,710	1,395	62,074	60.0%
% of C-3 Total	68.7	7.1	2.3	7.5	4.6	7.5	2.3	100.0%	
Retail	2,096	207	430	415	1,021	3,438	613	8,220	7.9%
% of C-3 Total	25.5	2.5	5.2	5.1	12.4	41.8	7.5	100.0%	
Transient Hotel	1,921	--	249	31	5,024	2,436	61	9,722	9.5%
% of C-3 Total	19.8	--	2.6	0.3	51.7	25.1	0.6	100.0%	
Residential Hotel	160	--	162	74	2,205	194	53	2,848	2.7%
% of C-3 Total	5.6	--	5.6	2.6	77.4	6.8	1.9	100.0%	
Housing	162	12	831	276	2,167	-	730	4,178	4.0%
% of C-3 Total	3.9	.3	19.9	6.6	51.8	-	17.5	100.0%	
Cultural/Institutional Educational/Other	1,035	150	871	183	2,179	823	879	6,120	5.9%
% of C-3 Total	16.9	2.5	14.2	3.0	35.6	13.4	14.4	100.0%	
Industrial/Warehouse/ Automotive	136	568	2,141	96	1,116	29	42	4,128	4.0%
% of C-3 Total	3.3	13.8	51.9	2.3	27.0	0.7	1.0	100.0%	
Parking	1,046	1,079	1,643	299	1,227	856	108	6,258	6.0%
% of C-3 Total	16.7	17.2	26.3	4.8	19.6	13.7	1.7	100.0%	
TOTAL	49,222	6,385	7,749	6,009	17,816	12,486	3,881	103,548	100.0%
Percent of Total	47.5%	6.2%	7.5%	5.8%	17.2%	12.1%	3.7%	100.0%	

(a) Space constructed in 1982-84 has been added to the 1981 inventory, space on these sites in 1981 removed, and projected conversion of space to office included. Net changes in space 1981-84 are reflected by the differences between the figures in Table IV.B.1 and the figures shown here.

(b) Non-office uses, such as retail and parking, located in office buildings are not included in estimates of office space, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

TABLE G.14: C-3 DISTRICT SPACE BY USE AND SUBAREA, 1990(a) (Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District	Percent of Total
Office(b)	48,561	5,093	1,793	4,654	3,185	5,662	1,544	70,492	60.9%
% of C-3 Total	68.9	7.2	2.6	6.6	4.5	8.0	2.2	100.0%	
Retail	2,434	241	522	415	1,039	3,687	611	8,949	7.7%
% of C-3 Total	27.2	2.7	5.8	4.7	11.6	41.2	6.8	100.0%	
Transient Hotel	1,921	--	249	31	6,837	3,436	61	12,535	10.8%
% of C-3 Total	15.3	--	2.0	.3	54.5	27.4	.5	100.0%	
Residential Hotel	147	--	162	74	2,205	194	53	2,835	2.4%
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%	
Housing	505	342	831	276	2,185	300	834	5,273	4.6%
% of C-3 Total	9.6	6.5	15.8	5.2	41.4	5.7	15.8	100.0%	
Cultural/Institutional Educational/Other	889	125	1,286	183	2,136	521	858	5,998	5.2%
% of C-3 Total	14.8	2.1	21.4	3.1	35.6	8.7	14.3	100.0%	
Industrial/Warehouse/ Automotive	103	431	1,716	77	905	21	32	3,285	2.8%
% of C-3 Total	3.1	13.1	52.2	2.4	27.5	.7	1.0	100.0%	
Parking	936	1,043	1,712	299	1,148	1,186	99	6,423	5.6%
% of C-3 Total	14.6	16.2	26.7	4.6	17.9	18.5	1.5	100.0%	
TOTAL	55,496	7,275	8,271	6,009	19,640	15,007	4,092	115,790	100.0%
Percent of Total	47.9	6.3	7.1	5.2	17.0	13.0	3.5	100.0%	

(a) 1990 space includes space in 1984 setting, plus space constructed 1984-1990, less space demolished and accounting for projected changes in use of space (conversions).
(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

(Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District
Office(b)	57,015	7,560	3,451	5,151	4,528	6,793	1,992	86,490
% of C-3 Total	65.9	8.7	4.0	6.0	5.2	7.9	2.3	100.0%
Retail	2,881	423	547	453	1,178	4,162	644	10,288
% of C-3 Total	28.0	4.1	5.3	4.4	11.5	40.4	6.3	100.0%
Transient Hotel	2,321	--	409	31	8,096	3,955	61	14,873
% of C-3 Total	15.6	--	2.8	0.2	54.4	26.6	0.4	100.0%
Residential Hotel	147	--	162	74	2,205	194	53	2,835
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%
Housing	635	342	831	276	2,335	300	884	5,603
% of C-3 Total	11.3	6.1	14.8	4.9	41.7	5.4	15.8	100.0%
Cultural/Institutional Educational/Other	772	93	1,453	183	1,979	145	814	5,439
% of C-3 Total	14.2	1.7	26.7	3.3	36.4	2.7	15.0	100.0%
Industrial/Warehouse/ Automotive	34	255	856	42	524	12	19	1,742
% of C-3 Total	1.9	14.6	49.4	2.4	29.9	0.7	1.1	100.0%
Parking	777	903	1,622	249	1,023	1,149	96	5,819
% of C-3 Total	13.4	15.5	27.9	4.3	17.6	19.7	1.6	100.0%
TOTAL	64,582	9,576	9,331	6,459	21,868	16,710	4,563	133,089
Percent of Total	48.5	7.2	7.0	4.9	16.4	12.6	3.4	100.0%

(a) 2000 space includes space in the 1984 setting, plus net changes in space 1984-1990, plus space constructed 1990-2000, less space demolished, and accounts for changes in the use of space (conversions).
(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

TABLE G.16: ALTERNATIVE 2 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000(a)
(Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District
Office(b)	56,085	7,559	3,437	5,105	4,416	6,710	1,954	85,266
% of C-3 Total	65.8	8.8	4.0	6.0	5.2	7.9	2.3	100.0%
Retail	2,803	423	544	449	1,176	4,154	643	10,192
% of C-3 Total	27.5	4.2	5.3	4.4	11.5	40.8	6.3	100.0%
Transient Hotel	2,321	--	409	31	8,096	3,955	61	14,873
% of C-3 Total	15.6	--	2.8	0.2	54.4	26.6	0.4	100.0%
Residential Hotel	147	--	162	74	2,205	194	53	2,835
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%
Housing	1,025	342	1,326	456	2,725	345	1,034	7,253
% of C-3 Total	14.1	4.7	18.3	6.3	37.6	4.8	14.2	100.0%
Cultural/Institutional Educational/Other	823	93	1,084	183	2,045	146	831	5,205
% of C-3 Total	15.8	1.8	20.8	3.5	39.3	2.8	16.0	100.0%
Industrial/Warehouse/ Automotive	34	255	1,142	42	524	12	19	2,028
% of C-3 Total	1.7	12.6	56.3	2.1	25.8	0.6	0.9	100.0%
Parking	776	900	1,619	249	1,032	1,150	97	5,823
% of C-3 Total	13.3	15.5	27.8	4.3	17.7	19.7	1.7	100.0%
TOTAL	64,014	9,572	9,723	6,589	22,219	16,666	4,692	133,475
Percent of Total	48.0	7.2	7.3	4.9	16.6	12.5	3.5	100.0%

(a) 2000 space includes space in the 1984 setting, plus net changes in space 1984-1990, plus space constructed 1990-2000, less space demolished, and accounts for changes in the use of space (conversions).
(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

(Thousands of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District
Office(b)	54,348	6,952	3,703	5,343	4,677	6,546	1,856	83,425
% of C-3 Total	65.2	8.3	4.4	6.4	5.6	7.9	2.2	100.0%
Retail	2,677	353	555	460	1,190	4,087	623	9,945
% of C-3 Total	26.9	3.5	5.6	4.6	12.0	41.1	6.3	100.0%
Transient Hotel	2,321	--	409	31	8,096	3,955	61	14,873
% of C-3 Total	15.6	--	2.8	0.2	54.4	26.6	0.4	100.0%
Residential Hotel	147	--	162	74	2,205	194	53	2,835
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%
Housing	1,165	342	831	276	2,320	300	884	6,118
% of C-3 Total	19.0	5.6	13.6	4.5	37.9	4.9	14.5	100.0%
Cultural/Institutional Educational/Other	828	79	1,006	183	1,920	173	817	5,006
% of C-3 Total	16.5	1.6	20.1	3.6	38.4	3.5	16.3	100.0%
Industrial/Warehouse/ Automotive	38	192	1,018	11	456	9	14	1,738
% of C-3 Total	2.2	11.1	58.6	0.6	26.2	0.5	0.8	100.0%
Parking	797	929	1,622	252	991	1,144	99	5,834
% of C-3 Total	13.7	15.9	27.8	4.3	17.0	19.6	1.7	100.0%
TOTAL	62,321	8,847	9,306	6,630	21,855	16,408	4,407	129,774
Percent of Total	48.0	6.8	7.2	5.1	16.8	12.7	3.4	100.0%

(a) 2000 space includes space in the 1984 setting, plus net changes in space 1984-1990, plus space constructed 1990-2000, less space demolished, and accounts for changes in the use of space (conversions).

(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

TABLE G.18: ALTERNATIVE 4 - C-3 DISTRICT SPACE BY USE AND SUBAREA, 2000(a)
(Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District
Office(b)	53,556	5,863	2,073	4,753	3,419	6,138	1,720	77,522
% of C-3 Total	69.1	7.6	2.7	6.1	4.4	7.9	2.2	100.0%
Retail	2,663	295	547	423	1,151	4,073	614	9,766
% of C-3 Total	27.3	3.0	5.6	4.3	11.8	41.7	6.3	100.0%
Transient Hotel	2,321	--	409	31	7,797	3,976	61	14,595
% of C-3 Total	15.9	--	2.8	0.2	53.4	27.3	0.4	100.0%
Residential Hotel	147	--	162	74	2,205	194	53	2,835
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%
Housing	1,405	432	1,471	596	2,825	385	1,104	8,218
% of C-3 Total	17.1	5.3	17.9	7.2	34.4	4.7	13.4	100.0%
Cultural/Institutional Educational/Other	841	115	1,257	183	2,105	185	851	5,537
% of C-3 Total	15.2	2.1	22.7	3.3	38.0	3.3	15.4	100.0%
Industrial/Warehouse/ Automotive	44	388	1,655	70	866	19	30	3,072
% of C-3 Total	1.4	12.6	53.9	2.3	28.2	0.6	1.0	100.0%
Parking	809	1,009	1,671	289	1,064	1,171	99	6,112
% of C-3 Total	13.2	16.5	27.4	4.7	17.4	19.2	1.6	100.0%
TOTAL	61,786	8,102	9,245	6,419	21,432	16,141	4,532	127,657
Percent of Total	48.4	6.4	7.2	5.0	16.8	12.6	3.6	100.0%

(a) 2000 space includes space in the 1984 setting, plus net changes in space 1984-1990, plus space constructed 1990-2000, less space demolished, and accounts for changes in the use of space (conversions).
(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

(Thousands Of Gross Sq. Ft.)

Use	Subarea 1	2	3	4	5	6	7	Total C-3 District
Office(b)	52,667	6,490	2,231	4,895	3,960	5,984	1,692	77,919
% of C-3 Total	67.6	8.3	2.2	6.3	5.1	7.7	2.2	100.0%
Retail	2,602	319	547	430	1,172	4,086	617	9,773
% of C-3 Total	26.6	3.3	5.6	4.4	12.0	41.8	6.3	100.0%
Transient Hotel	2,321	--	409	31	7,797	3,976	61	14,595
% of C-3 Total	15.9	--	2.8	0.2	53.4	27.3	0.4	100.0%
Residential Hotel	147	--	162	74	2,205	194	53	2,835
% of C-3 Total	5.2	--	5.7	2.6	77.8	6.8	1.9	100.0%
Housing	725	342	943	276	2,505	348	1,034	6,173
% of C-3 Total	11.7	5.5	15.3	4.5	40.6	5.6	16.8	100.0%
Cultural/Institutional Educational/Other	844	79	1,243	183	1,980	185	817	5,331
% of C-3 Total	15.8	1.5	23.3	3.4	37.2	3.5	15.3	100.0%
Industrial/Warehouse/ Automotive	55	128	1,506	21	537	6	9	2,262
% of C-3 Total	2.4	5.7	66.6	0.9	23.7	0.3	0.4	100.0%
Parking	836	959	1,622	279	1,039	1,140	99	5,974
% of C-3 Total	14.0	16.0	27.1	4.7	17.4	19.1	1.7	100.0%
TOTAL	60,197	8,317	8,663	6,189	21,195	15,919	4,382	124,862
Percent of Total	48.2	6.7	6.9	5.0	17.0	12.7	3.5	100.0%

(a) 2000 space includes space in the 1984 setting, plus net changes in space 1984-1990, plus space constructed 1990-2000, less space demolished, and accounts for changes in the use of space (conversions).

(b) Non-office uses, such as retail, located in office buildings are not included in the estimates of space in office use, but are included in their respective space use categories.

SOURCE: Recht Hausrath & Associates

TABLE G.20: CHANGES IN C-3 DISTRICT SPACE BY USE, 1981-1984 (Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Residential Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	7,418	--	500	--	--	--	--	--	7,918
Other New Construction	--	175	--	--	98	--	--	--	273
Retail Space In New Office Buildings	(426)	426	--	--	--	--	--	--	0
New Space by Use	6,992	601	500	--	98	--	--	--	8,191
Space Demolished by Use	(719)	(137)	--	--	--	(62)	--	(93)	(1,011)
Conversion to Office Use	542	--	--	--	--	(205)	(337)	--	0
Other Changes In Use	(69)	--	--	--	--	69	--	--	0
Net Changes In Space by Use	6,746	464	500	--	98	(198)	(337)	(93)	7,180

SOURCE: Recht Hausrath & Associates

TABLE G.21: CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1981-1984
(Thousands of Gross Sq. Ft.)

	Subarea							Total C-3 District
	1	2	3	4	5	6	7	
Total Space in New Office Buildings	6,624	339	335	--	120	--	--	7,418
(Amount Occupied by Retail Use)	(418)	--	--	--	(8)	--	--	(426)
New Space for Office Uses	6,206	339	335	--	112	--	--	6,992
(Office Space Demolished)	(719)	--	--	--	--	--	--	(719)
Net New Space Occupied by Office Uses	5,487	339	335	--	112	--	--	6,273
Conversions to Office Use	17	82	183	9	120	116	15	542
Changes to Other Uses	--	--	--	--	(69)	--	--	(69)
Total Additional Space Occupied by Office Uses	5,504	421	518	9	163	116	15	6,746
Percent of Total Additional Space Occupied by Office Uses	81.6%	6.3%	7.7%	0.1%	2.4%	1.7%	0.2%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.22: CHANGES IN C-3 DISTRICT SPACE BY USE, 1984-1990 (Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Residential Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	9,868	--	2,813	--	--	--	--	--	12,681
Other New Construction	--	360	--	--	1,095	565	--	1,030	3,050
Retail Space In New Office Buildings	(557)	557	--	--	--	--	--	--	0
New Space by Use	9,311	917	2,813	--	1,095	565	--	1,030	15,731
Space Demolished by Use	(1,542)	(188)	--	(13)	--	(733)	(148)	(865)	(3,489)
Conversion to Office Use	805	--	--	--	--	(110)	(695)	--	0
Other Changes In Use	(156)	--	--	--	--	156	--	--	0
Net Changes In Space by Use	8,418	729	2,813	(13)	1,095	(122)	(843)	(165)	12,242

SOURCE: Recht Hausrath & Associates

TABLE G.23: CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1984-1990
(Thousands of Gross Sq. Ft.)

	Subarea							Total
	1	2	3	4	5	6	7	C-3 District
Total Space in New Office Buildings	7,733	679	34	--	297	995	130	9,868
(Amount Occupied by Retail Use)	(416)	(34)	(2)	--	(47)	(50)	(8)	(557)
New Space for Office Uses	7,317	645	32	--	250	945	122	9,311
(Office Space Demolished)	(1,450)	(84)	--	--	(6)	--	(2)	(1,542)
Net New Space Occupied by Office Uses	5,867	561	32	--	244	945	120	7,769
Conversions to Office Use	28	163	399	19	160	7	29	805
Changes to Other Uses	--	--	(60)	--	(96)	--	--	(156)
Total Additional Space Occupied by Office Uses	5,895	724	371	19	308	952	149	8,418
Percent of Total Additional Space Occupied by Office Uses	70.0%	8.6%	4.4%	0.2%	3.7%	11.3%	1.8%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.24: ALTERNATIVE 1 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000
(Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	16,935	--	2,360	--	--	--	--	19,295
Other New Construction	--	478	--	330	--	--	--	808
Retail Space In New Office Buildings	(1,438)	1,438	--	--	--	--	--	0
New Space by Use	15,497	1,916	2,360	330	--	--	--	20,103
Space Demolished by Use	(853)	(577)	(22)	--	(606)	(142)	(604)	(2,804)
Conversion to Office Use	1,721	--	--	--	(320)	(1,401)	--	0
Other Changes In Use	(367)	--	--	--	367	--	--	0
Net Changes In Space by Use	15,998	1,339	2,338	330	(559)	(1,543)	(604)	17,299

SOURCE: Recht Hausrath & Associates

TABLE G.25: ALTERNATIVE 1 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1990-2000
(Thousands of Gross Sq. Ft.)

	Subarea							Total
	1	2	3	4	5	6	7	C-3 District
Total Space in New Office Buildings	10,000	2,500	1,000	500	1,035	1,400	500	16,935
(Amount Occupied by Retail Use)	(750)	(188)	(25)	(38)	(129)	(245)	(63)	(1,438)
New Space for Office Uses	9,250	2,312	975	462	906	1,155	437	15,497
(Office Space Demolished)	(796)	--	--	--	(9)	(33)	(15)	(853)
Net New Space Occupied by Office Uses	8,454	2,312	975	462	897	1,122	422	14,644
Conversions to Office Use	--	155	850	35	646	9	26	1,721
Changes to Other Uses	--	--	(167)	--	(200)	--	--	(367)
Total Additional Space Occupied by Office Uses	8,454	2,467	1,658	497	1,343	1,131	448	15,998
Percent of Total Additional Space Occupied by Office Uses	52.9%	15.4%	10.3%	3.1%	8.4%	7.1%	2.8%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.26: ALTERNATIVE 2 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000
(Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Housing	Cult/Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	15,500	--	2,360	--	--	--	--	17,860
Other New Construction	--	487	--	1,980	--	--	--	2,467
Retail Space In New Office Buildings	(1,315)	1,315	2,360	--	--	--	--	0
New Space by Use	14,185	1,802	2,360	1,980	--	--	--	20,327
Space Demolished by Use	(854)	(559)	(22)	--	(466)	(141)	(600)	(2,642)
Conversion to Office Use	1,726	--	--	--	(610)	(1,116)	--	0
Other Changes In Use	(283)	--	--	--	283	--	--	0
Net Changes In Space by Use	14,774	1,243	2,338	1,980	(793)	(1,257)	(600)	17,685

SOURCE: Recht Hausrath & Associates

TABLE G.27: ALTERNATIVE 2 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1990-2000
(Thousands of Gross Sq. Ft.)

	Subarea							Total C-3 District
	1	2	3	4	5	6	7	
Total Space in New Office Buildings	9,000	2,500	900	450	900	1,300	450	15,500
(Amount Occupied by Retail Use)	(675)	(188)	(22)	(34)	(112)	(228)	(56)	(1,315)
New Space for Office Uses	8,325	2,312	878	416	788	1,072	394	14,185
(Office Space Demolished)	(801)	--	--	--	(8)	(33)	(12)	(854)
Net New Space Occupied by Office Uses	7,524	2,312	878	416	780	1,039	382	13,331
Conversions to Office Use	--	154	850	35	650	9	28	1,726
Changes to Other Uses	--	--	(84)	--	(199)	--	--	(283)
Total Additional Space Occupied by Office Uses	7,524	2,466	1,644	451	1,231	1,048	410	14,774
Percent of Total Additional Space Occupied by Office Uses	50.9%	16.7%	11.1%	3.1%	8.3%	7.1%	2.8%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.28: ALTERNATIVE 3 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000
(Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	13,200	--	2,360	--	--	--	--	15,560
Other New Construction	--	487	--	1,885	--	--	--	2,372
Retail Space In New Office Buildings	(1,100)	1,100	--	--	--	--	--	0
New Space by Use	12,100	1,587	2,360	1,885	--	--	--	17,932
Space Demolished by Use	(762)	(591)	(22)	--	(516)	(428)	(589)	(2,908)
Conversion to Office Use	1,862	--	--	--	(743)	(1,119)	--	0
Other Changes In Use	(267)	--	--	--	267	--	--	--
Net Change In Space By Use	12,933	966	2,338	1,885	(992)	(1,547)	(589)	15,024

SOURCE: Recht Hausrath & Associates

TABLE G.29: ALTERNATIVE 3 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1990-2000
(Thousands of Gross Sq. Ft.)

	Subarea							Total C-3 District
	1	2	3	4	5	6	7	
Total Space in New Office Buildings	7,000	1,800	1,300	700	1,000	1,100	300	13,200
(Amount Occupied by Retail Use)	(525)	(135)	(33)	(52)	(125)	(192)	(38)	(1,100)
New Space for Office Uses	6,475	1,665	1,267	648	875	908	262	12,100
(Office Space Removed)	(688)	(4)	(17)	(3)	(9)	(36)	(5)	(762)
Net New Space Occupied by Office Uses	5,787	1,661	1,250	645	866	872	257	11,338
Conversions to Office Use	--	198	730	44	823	12	55	1,862
Changes to Other Uses	--	--	(70)	--	(197)	--	--	(267)
Total Additional Space Occupied by Office Uses	5,787	1,859	1,910	689	1,492	884	312	12,933
Percent of Total Additional Space Occupied by Office Uses	44.8%	14.4%	14.8%	5.3%	11.5%	6.8%	2.4%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.30: ALTERNATIVE 4 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000
(Thousands of Gross Sq. Ft.)

	Office	Retail	Transient Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	8,100	--	2,060	--	--	--	--	10,160
Other New Construction	--	564	--	2,945	--	--	--	3,509
Retail Space In New Office Buildings	(678)	678	--	--	--	--	--	0
New Space by Use	7,422	1,242	2,060	2,945	--	--	--	13,669
Space Demolished by Use	(587)	(425)	--	--	(395)	(84)	(311)	(1,812)
Conversion to Office Use	195	--	--	--	(66)	(129)	--	0
Other Changes In Use	--	--	--	--	--	--	--	--
Net Change In Space By Use	7,030	817	2,060	2,945	(461)	(213)	(311)	11,867

SOURCE: Recht Hausrath & Associates

TABLE G.31: ALTERNATIVE 4 - CHANGES IN C-3 DISTRICT IN OFFICE SPACE BY SUB-AREA, 1990-2000
(Thousands of Gross Sq. Ft.)

	Subarea							Total C-3 District
	1	2	3	4	5	6	7	
Total Space in New Office Buildings	6,000	800	200	100	200	600	200	8,100
(Amount Occupied by Retail Use)	(450)	(60)	(5)	(8)	(25)	(105)	(25)	(678)
New Space for Office Uses	5,550	740	195	92	175	495	175	7,422
(Office Space Removed)	(555)	(1)	--	--	(6)	(21)	(4)	(587)
Net New Space Occupied by Office Uses	4,995	739	195	92	169	474	171	6,835
Conversions to Office Use	--	31	85	7	65	2	5	195
Changes to Other Uses	--	--	--	--	--	--	--	--
Total Additional Space Occupied by Office Uses	4,995	770	280	99	234	476	176	7,030
Percent of Total Additional Space Occupied by Office Uses	71.0%	11.0%	4.0%	1.4%	3.3%	6.8%	2.5%	100.0%

SOURCE: Recht Hausrath & Associates

TABLE G.32: ALTERNATIVE 5 - CHANGES IN C-3 DISTRICT SPACE BY USE, 1990-2000
(Thousands of Gross Sq. Ft.)

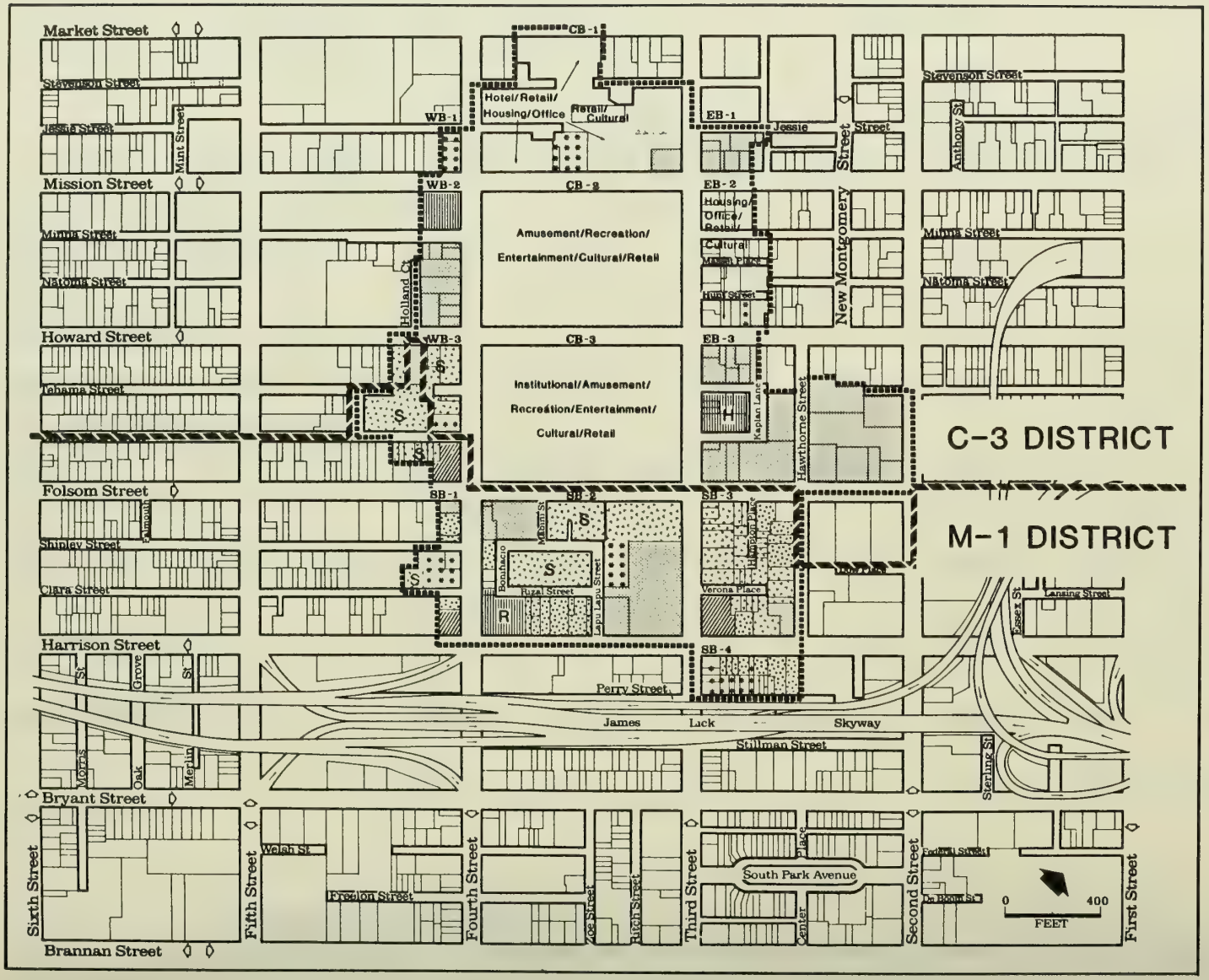
	Office	Retail	Transient Hotel	Housing	Cult./Inst./ Educ./Other	Ind./Whse./ Automotive	Parking	Total
New Construction of Office Buildings and Hotels	7,400	--	2,060	--	--	--	--	9,460
Other New Construction	--	635	--	900	--	--	--	1,535
Retail Space In New Office Buildings	(605)	605	--	--	--	--	--	0
New Space by Use	6,795	1,240	2,060	900	--	--	--	10,995
Space Demolished by Use	(552)	(416)	--	--	(400)	(106)	(449)	(1,923)
Conversion to Office Use	1,231	--	--	--	(314)	(917)	--	0
Other Changes In Use	(47)	--	--	--	47	--	--	--
Net Change In Space By Use	7,427	824	2,060	900	(667)	(1,023)	(449)	9,072

SOURCE: Recht Hausrath & Associates

TABLE G.33: ALTERNATIVE 5 - CHANGES IN C-3 DISTRICT OFFICE SPACE BY SUB-AREA, 1990-2000
(Thousands of Gross Sq. Ft.)

	Subarea							Total C-3 District
	1	2	3	4	5	6	7	
Total Space in New Office Buildings	5,000	1,200	200	200	300	400	100	7,400
(Amount Occupied by Retail Use)	(375)	(90)	(5)	(15)	(38)	(70)	(12)	(605)
New Space for Office Uses	4,625	1,110	195	185	262	330	88	6,795
(Office Space Removed)	(519)	(2)	--	--	(6)	(23)	(2)	(552)
Net New Space Occupied by Office Uses	4,106	1,108	195	185	256	307	86	6,243
Conversions to Office Use	--	289	243	56	566	15	62	1,231
Changes to Other Uses	--	--	--	--	(47)	--	--	(47)
Total Additional Space Occupied by Office Uses	4,106	1,397	438	241	775	322	148	7,427
Percent of Total Additional Space Occupied by Office Uses	55.3%	18.8%	5.9%	3.3%	10.4%	4.3%	2.0%	100.0%

SOURCE: Recht Hausrath & Associates

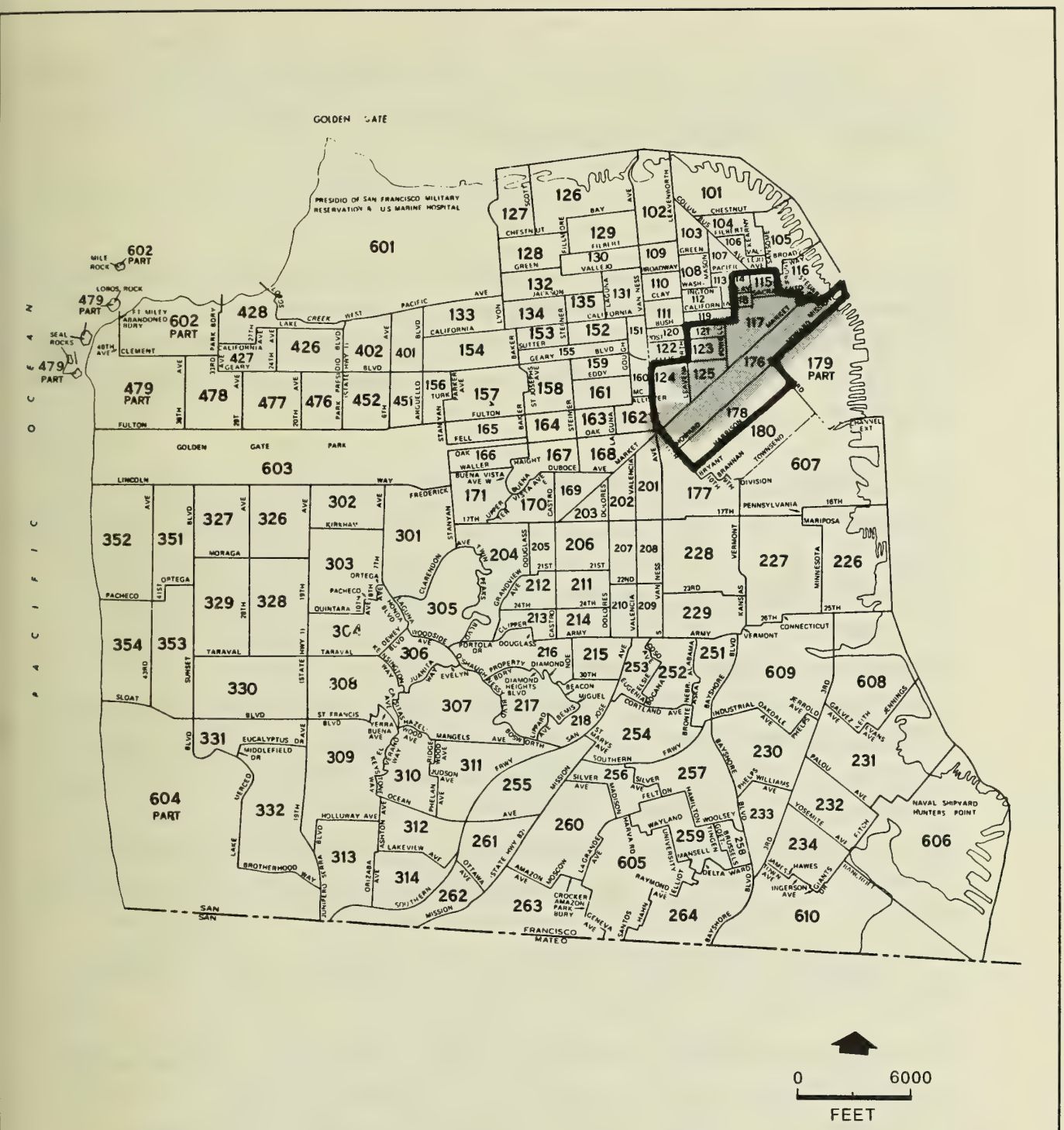


LEGEND

- HOUSING
- SUBSIDIZED HOUSING
- OFFICE
- RETAIL
- DOWNTOWN SUPPORT
- LIGHT INDUSTRY
- INSTITUTIONAL
- HOTEL
- PARKING
- PARKING AND HOUSING
- PARKING AND RETAIL
- VACANT
- REDEVELOPMENT AREA BOUNDARY
- ZONING DISTRICTS

FIGURE G.3:
YBC MAIN PROGRAM ALTERNATIVE SHOWING C-3 DISTRICT BOUNDARY

SOURCE: Environmental Science Associates, Inc., using information provided by the San Francisco Redevelopment Agency



123 CENSUS TRACTS

C-3 DISTRICT

FIGURE G.4:
DOWNTOWN CENSUS TRACTS USED TO IDENTIFY HOUSING UNITS IN C-3 DISTRICT

APPENDIX H: EMPLOYMENT ANALYSIS

INTRODUCTION

Assessing the effects of alternative land use and development policies required analysis of business activity and employment in San Francisco's C-3 District. The analysis has two parts: estimating current employment in the C-3 District and forecasting employment growth in this area, to the year 2000.

There are several reasons why this analysis is necessary. First, no published sources report employment data for the downtown area. The principle sources of local area employment data (the State Employment Development Department and the U.S. Department of Commerce) collect and report only citywide totals for San Francisco. Second, the C-3 District share of total City employment is unknown. (Other studies present estimates of employment as a share of City totals for variously defined "downtown" areas. These estimates are discussed in this Appendix, in comparison with estimates prepared for this report.) Third, employment statistics for the City and those used in the above-mentioned estimates of "downtown" shares provide no information on the types of business functions in various types of space. This reason is particularly important because the policies of the Alternatives analyzed in this study affect businesses and employment by their direct effect on the supply of space in the C-3 District.

This Appendix provides information to support the Business and Employment analysis presented in sections IV.C (Environmental Setting) and V.C. (Environmental Impacts). The Appendix focuses on methodology and includes some more detailed discussion and tables as background to the employment estimates presented in the text. There are four sections to the Appendix: 1) Current C-3 District Employment, 2) C-3 District Employment Forecasts, 3) Job and Workforce Characteristics, and 4) Supplemental Tables and Maps for Employment Analysis. Because of the broad scope of this study and the large amounts of data

collected and analyzed, information in both the text and Appendix is summarized to highlight conclusions.

CURRENT C-3 DISTRICT EMPLOYMENT

Approach

Employment estimates for the C-3 District are a synthesis of two major data collection efforts undertaken specifically for this study:

- Downtown EIR Land Use Inventory: an inventory of the type of space in buildings in the C-3 District (described in Appendix C) and
- Downtown EIR Employer Survey: a survey of business establishments located in the C-3 District (described in Appendix F).

The Land Use Inventory identified the amount of space of each type in each subarea of the C-3 District. The Employer Survey identified the types of businesses and numbers of employees in that space. The employment analysis linked data on the amount and distribution of different types of space downtown with information describing the characteristics of downtown business activities.

The product of this analysis, the employment estimates for the C-3 District, is different from what is usually produced in studies of this type. In place of the broad standard industrial classification (SIC) of employment (recorded in published statistics), which includes a diverse mix of business functions, this analysis defined employment categories by both the functions of business establishments and the types of space (land use categories) in which they are located. The resultant employment estimates not only describe the number and type of jobs in various business activities, but also identify the amount of space occupied by different types of activities, as well as the location of these activities among the seven subareas of the C-3 District (see Figure II.C.1).

The data used to identify current conditions of space use and employment reflect the 1981/1982 situation. The Downtown EIR Land Use Inventory was conducted from late 1981 through early 1982. The Downtown EIR Employer Survey was conducted from January, 1982 through September, 1982. Both space and employment in the C-3 District are constantly changing; therefore it is difficult to specify a date for the current situation estimates. On balance, the estimates that result from the employment analysis are most comparable to other employment data for 1981.

Estimating Procedures

The Downtown EIR Employer/Employee Survey methodology is described in detail in Appendix F. A few points are noted here as they relate to the employment estimating methodology. The Downtown EIR Land Use Inventory, listing buildings and the square footage in various uses in those buildings, was the basis for the survey sample. The initial sampling unit was building space. Following a multi-step procedure, sample business establishments were selected in each of seven subareas. The total sample includes 58 different establishments, ranging from sole-proprietors to facilities employing several thousand workers, and covers the major space use categories (office, retail, hotel, educational/institutional, industrial/parking).

Information from the Employer Survey was used in the employment estimating procedure, together with information from the Land Use Inventory./1/ The critical data are listed below:

- amount of occupied space for each establishment in the sample
- number of employees occupying that space
- the Standard Industrial Classification (SIC) for each establishment

- more detailed information on the type of business and the functions located in the space (e.g. Was the establishment one branch of a larger organization? Was it a headquarters office? Did it house machines and equipment in addition to people and desks?)

- the square footage of space in each space use, within each subarea (from the Downtown EIR Land Use Inventory)

- additional information from the Land Use Inventory about the businesses and functions located in each subarea

The sampling methodology for the Employer Survey required that the responses of each establishment be weighted relative to the actual probability of the establishment being selected. Weighting the responses, when the sample establishments have different probabilities of selection is an adjustment made to the data so that, for example, the responses of large organizations do not overwhelm the responses of smaller firms. Appendix F describes the statistical basis and formulas for the sample weights in more detail. Figure H.1, at the end of the discussion, summarizes the procedure and relationships among the different data sources. The following steps describe how the weighted data were used to derive employment estimates for the C-3 District.

(1) The sample establishments were grouped by subarea and, within a subarea, by SIC and space use. For example, the sample establishments in the wholesale trade SIC in Subarea 6 might occupy office space, while the sample establishments in the same SIC in Subarea 3 might occupy warehouse space.

(2) The weighted gross square footage (GSF) for each SIC group within a space use category (from one establishment or the weighted sum of two or more establishments) provided the basis for distributing the total estimated gross square footage for that space use, from the Land Use Inventory, among SIC groups. Information from the Land Use Inventory supplemented the survey data by providing further detail on the types of businesses in a particular subarea.

For example, the weighted results of the Employer Survey might indicate the following distribution of occupied office space in a subarea: manufacturing - 20 percent; wholesale trade - 30 percent; retail services - 35 percent; and finance, insurance and real estate - 15

percent. If there were 400,000 GSF of office space in that subarea (according to the Land Use Inventory), then the amount of office space occupied by each type of employment would be as follows: manufacturing - 80,000 GSF; wholesale trade - 120,000 GSF; retail services - 140,000 GSF; and finance, insurance and real estate - 60,000 GSF.

(3) A density factor (GSF per employee) was calculated from the weighted responses to the Employer Survey for each SIC group within a space use category (e.g. manufacturing in office, wholesale trade in office, FIRE in office, FIRE in branch bank space). Applying this factor to the estimated GSF by SIC for each space use in each subarea (Step 2 above) resulted in an estimate of employment in each SIC by space use and subarea.

Continuing with the same example used above, if the weighted responses from the survey provided the following estimates of employment density in a subarea: manufacturing - 350 GSF/E; wholesale trade - 200 GSF/E; retail services - 150 GSF/E; and finance, insurance and real estate - 220 GSF/E, then the resultant estimates of office employment in that subarea would be as follows: manufacturing - 230; wholesale trade - 700; retail services - 930; and finance, insurance and real estate - 270./2/

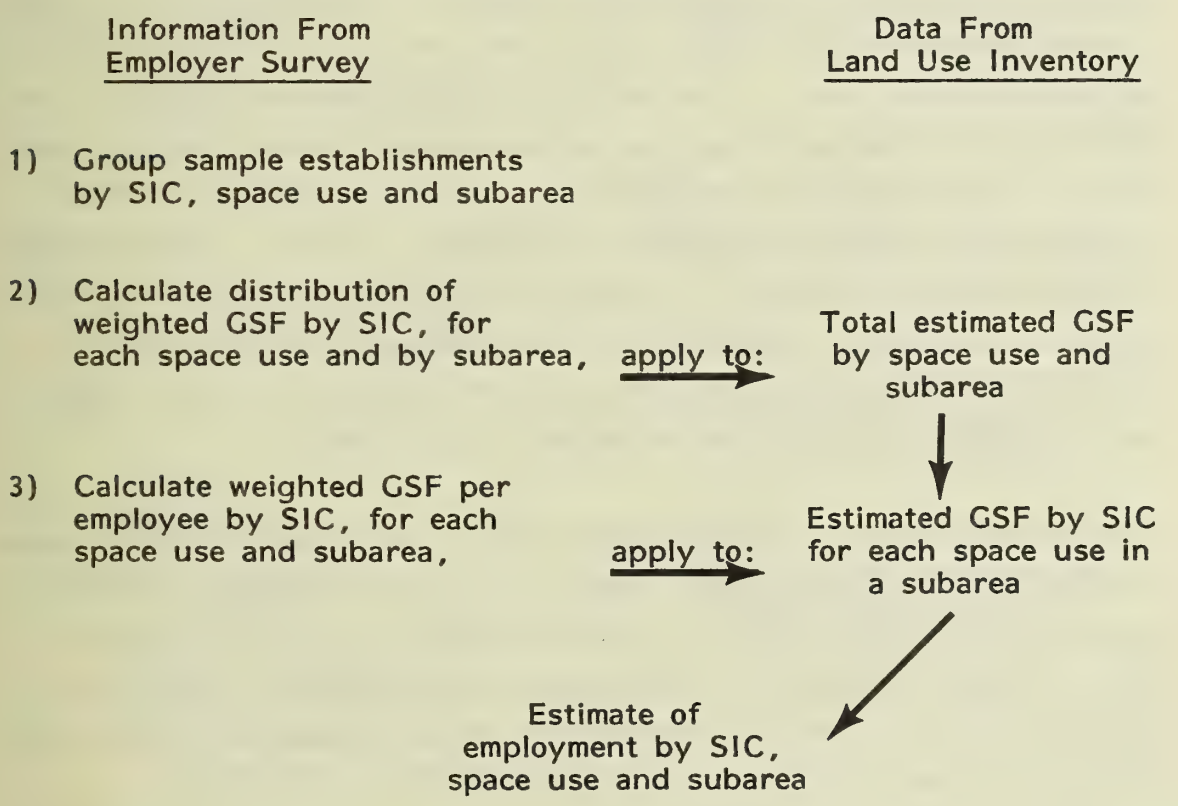
If the Employer Survey sample identified vacant space, the share of total space represented by this selection was not included in the space for which employment was calculated./3/ Similarly, space identified in the Land Use Inventory as under construction and not yet occupied was excluded from the amount used to calculate employment estimates.

Total employment in the C-3 District is the sum of total employment for each subarea. Total employment by SIC is the sum of SIC employment across subareas.

The sampling scheme for the Downtown EIR Employer Survey could not ensure that establishments representing all SIC's in a subarea would be selected. Since the employment estimating procedure relied on the distribution among SIC's of establishments that were selected, it is probable that employment in any one SIC is over-estimated in some subareas, and that the survey sample missed relatively small amounts in other subareas. The resultant pattern of employment by SIC appears

generally reasonable, however. Moreover, aggregating the estimates partially compensates for any sampling bias within subareas; estimates of employment by SIC are more accurate for the C-3 District total than for individual subareas. Variation in the employment estimates due to the sample coverage in each subarea would have only a small effect on the estimate of total employment in the C-3 District.

FIGURE H.1: PROCEDURE FOR ESTIMATING C-3 DISTRICT EMPLOYMENT



SOURCE: Recht Hausrath & Associates

Definition of Business Activities

The combination of SIC and space use, together with detailed information on business function from the Employer Survey, provided the basis for defining the business activity groups used throughout the employment analysis. Within office activities with large amounts of employment, business activities were further subdivided into functional categories.

A few examples of the distinctions that can be made within an SIC illustrate the usefulness of the business activity and functional categories in describing economic activity in the study area. The manufacturing SIC includes employment in headquarters offices in the heart of the financial district, showroom and display offices near the downtown retail core, as well as industrial space in the outlying areas of the C-3 District. The Downtown EIR Employer/Employee survey sample included each of these types of manufacturing establishments. Similarly, employment in the FIRE or TCU standard industrial classifications occurs in headquarters or other executive offices, in large-scale facilities with equipment and space for receiving, processing and distributing information, and in small retail-type outlets that serve customers directly. Again, the survey sample included establishments of each type.

The various business functions within an SIC may place different values on the location and the cost of space. They may also place different values on the relative costs of labor and space and the availability of certain types of workers. It is consequently important to distinguish these activities, in order to analyze the impact of policies affecting the supply and cost of space in the C-3 District.

The business activities defined in the employment analysis were grouped into seven major categories for more manageable discussion. Although the tables in the text focus on these major categories, most calculations (for both the current situation and the forecast) used the disaggregated data. Table H.1 lists all the business activities under their major category headings.

TABLE H.1: C-3 DISTRICT BUSINESS ACTIVITIES AND FUNCTIONS

Business Activity	Functions
Primary Office	
Manufacturing and Mining Finance, Insurance, and Real Estate Business and Professional Services Transportation, Communication and Utilities Government Offices	executive, administrative and information processing
Secondary Office	sales, showrooms, customer services
Wholesale and Manufacturing Sales Retail Services Branch Banks	
Retail Trade	sales, eating and drinking
Retail Stores and Shops Restaurants and Bars	
Hotels	overnight accommodations, eating and drinking
Transient Residence	
Cultural/Institutional/ Educational	administrative, educational, entertainment, other
Education Facilities Non-Profits Theatres, Museums Institutional, Other	
Industrial/Warehouse/ Automotive	manufacturing, warehouse, repair, storage
Industrial/Warehouse Automotive	
Parking	parking

SOURCE: Recht Hausrath & Associates

Employment Densities for Business Activities

Table H.2 shows employment densities for all business activities in the C-3 District. The densities for the components of the major categories are the results of the weighted responses to the Downtown EIR Employer Survey. The overall densities for the major categories (primary office, secondary office, retail trade, hotels) will be most useful in future planning studies and project EIR evaluation./4/

TABLE H.2: C-3 DISTRICT BUSINESS ACTIVITIES AND EMPLOYMENT DENSITIES, 1981

Business Activity	Employment Densities (a)
Primary Office	276 (b)
Manufacturing and Mining	366
Finance, Insurance, and Real Estate	222
Business and Professional Services	315
Transportation, Communication and Utilities	299
Government Offices	266
Secondary Office	208 (b)
Wholesale and Manufacturers Sales	232
Retail Services	178
Branch Banks	240
Retail Trade	350
Retail Stores and Shops	442
Restaurants and Bars	200
Hotels	908
Transient	759 (c)
Residence	2,498

TABLE H.2: C-3 DISTRICT BUSINESS ACTIVITIES AND EMPLOYMENT DENSITIES, 1981 (Continued)

Business Activity	Employment Densities (a)
Cultural/Institutional/Education	777
Education Facilities	758
Non-Profits	546
Theatres, Museums	828
Institutional, Other	
Industrial/Warehouse/Automotive	783
Industrial/Warehouse	661
Automotive	2,335
Parking	5,100 (d)

(a) Gross square feet of occupied building space per employee. Does not include allowance for vacant, unoccupied space.

(b) All office activities together (primary and secondary) average 265 gross sq. ft. per employee.

(c) Transient hotels average 0.74 employees per room.

(d) Gross square feet of parking space in lots and buildings

SOURCE: Recht Hausrath & Associates

The densities in Table H.2 represent gross square feet of occupied building space per employee. By definition, gross occupied square feet (as opposed to net occupied square feet) includes some building space not occupied by employees. Examples of the type of space included in this calculation are hallways, stairways, and storage areas as well as work space. Vacant, unoccupied space that could be occupied by employees is not included in this definition, however./5/

Building Maintenance/Security and Construction Employment

Two categories of C-3 District employment were not covered by the survey and land use inventory estimating procedure. Building maintenance and security personnel working in downtown buildings may be employed by a firm that is not located in the C-3 District. That firm would not have been selected by the Employer Survey sampling methodology./6/ Similarly, construction workers employed on projects in the C-3 District (new construction, conversion or on-going maintenance) would not have been selected by the sampling scheme which focussed on occupants of building space. Employment in both categories was estimated by alternative means.

The employment estimate for building maintenance and security personnel (janitors, building engineers and guards) was based on the amount of occupied space in the C-3 District. (Hotel and largely vacant space was not included in this calculation. The maintenance and security workers in hotel space were accounted for in the survey results.) The ratio of building maintenance/security personnel to occupied building space is assumed to be 40 employees for every 500,000 gross square feet./7/ Applying this ratio to the total estimated gross square footage in the relevant land uses (from the Downtown EIR Land Use Inventory) results in an estimate of building maintenance/security personnel in the C-3 District.

Construction employment in the C-3 District comes primarily from three types of activity: new construction, conversion of existing space to other uses (usually office) and ongoing remodeling, maintenance, and repair. The estimate of construction employment accounts for each of these sources of activity. (Table H.19 in the last section of the Appendix, Supplemental Tables and Maps for Employment Analysis, shows construction employment by these components for all years analyzed in this study.)

These estimates are based on formulas that relate the construction cost of new buildings and conversions to on-site construction labor wages, person-years of construction labor and, finally, average annual construction jobs. The figure below (Figure H.2) shows how these types of projects were used to develop estimates of jobs due to new construction.

FIGURE H.2: PROCEDURE FOR ESTIMATING CONSTRUCTION EMPLOYMENT FROM NEW CONSTRUCTION

- Total New GSF x Average Construction Cost = Total Construction Cost (A)
- 30% of A = On-site labor share of total construction cost (B)
- B/$37,800 = Total person-years construction labor

NOTE: Total new GSF = new gross square footage in office, retail, hotel, housing and parking uses.

Average construction cost = cost per sq. ft. from the real estate development feasibility analysis, see Appendix G.

The 30 percent ratio for the on-site labor share of construction cost originates from: SPUR, Impact of Intensive High Rise Development on San Francisco, Detailed Findings, June 1975, p. 94. The ratio used in the SPUR study was confirmed for this study: Stan Smith, San Francisco Building and Construction Trades Council, personal communication, October 27, 1982.

Average annual construction wage = $37,800 (1982 dollars). Per S. Smith, San Francisco Building and Construction Trades Council, October 27, 1982. The estimate incorporates the following assumptions:

Average hourly wage rate:	$25	
Average hours/week:	36	
Average working weeks/year:	42	(assuming a 10½-month year, reflecting the ability to do inside work on large downtown projects during bad weather.)

SOURCE: Recht Hausrath & Associates

For the 1981 estimate, projects under construction are those that result in the 1984 setting for land use and real estate development. A proportion (60 percent) of the result of the above-described calculation was assumed for the 1981 estimate of construction employment due to new construction occurring over the 1981-1984 period.

A similar procedure was followed to estimate construction employment due to conversions. The amount of space estimated to be converted in the 1981-84 period was forecast. Assuming an average construction cost of $30 per square foot, and all other factors the same, results in an estimate of person-years for conversion projects. The annual average employment for the three-year period is assumed for the 1981 estimate.

To estimate construction employment due to ongoing repair and maintenance, an average annual construction expense was assumed for all existing space in office, retail, transient hotel, government, educational, institutional, and cultural space. The average estimate ($1.00 per square foot per year) assumes that, for relatively new office buildings, the annual expense would be about 1½ percent of the new construction cost. The average estimate reflects the considerations that retail and hotel uses generally spend more than this, and that older, upper story office and other uses spend less. This average annual expense per square foot translates directly to construction wages and, subsequently, to construction jobs.

In addition to construction labor, the estimates account for employment in project management and related clerical positions. Another 20 percent of construction employment is estimated to be in the C-3 District while projects are under construction.

Other Employment

There is another category of employment in the C-3 District, referred to as "floating" employment in the text. The workers in this category spend a part, if not all, of their day in the C-3 District but are not necessarily occupants of specific building space in the area.

Examples of these workers are messengers, bus and taxi drivers, and delivery persons. At any one time, some of this group of "floating" workers, is part of the population of C-3 District workers. Their number is difficult to estimate, however, because of the large geographic area in which they may operate. Estimates for this group were not prepared.

Comparison To Other Estimates

The C-3 District employment estimates developed through the methodology described above were compared to citywide employment statistics for 1981. This comparison is presented in Table IV.C.4 in the text. The resultant shares of City employment (in each industry group) located in the C-3 District appeared reasonable and indicated that, overall, just less than half of the City's employment is in the study area.

The employment comparisons were made using 1981 published data from the State Employment Development Department (EDD). No other published statistics for 1981 were available as of November 1982. The other source for employment statistics is County Business Patterns (CBP) published by the Department of Commerce. Comparison of data for earlier years indicates that City employment reported by CBP tends to be higher than the data from EDD. For example, for 1972 and 1979 San Francisco employment figures from CBP were seven to ten percent higher than the EDD figures./8/ Differences in reporting, processing and adjusting information are part of the explanation of these differences.

Although the original sources for both tabulations are quarterly employer forms submitted to federal (CBP) and state (EDD) agencies, the reporting requirements and definitions differ. The most important difference is the treatment of large firms with operations in more than one location. For example, all of the employees of a large corporation headquartered in San Francisco could be counted as San Francisco

employment if they were paid out of the San Francisco office. Through periodic surveys, EDD attempts to double-check potential distortions of this kind. EDD revises past statistics if reporting errors such as these are detected. County Business Patterns statistics are not revised or adjusted in this manner. For example, since 1974, industrial classifications have been assigned on a different basis in certain categories (notably transportation, communication and utilities) than they were in previous years. Consequently, County Business Patterns data from 1974 to the present are not comparable to earlier statistics in the series and are more different compared to other sources, such as EDD.

The comparison between EDD data and the results of the C-3 District employment analysis indicated a reasonable relationship between citywide and C-3 District employment in 1981. Therefore, it was concluded that EDD data provide a more accurate estimate of those working in San Francisco. When the CBP figures for 1981 are released, comparison of those figures with the C-3 District estimates might indicate that the C-3 District represents a smaller share of City employment, depending on the amount of employment recorded for 1981.

An estimate of employment in Downtown San Francisco in 1979 was made recently for transportation planning purposes. This Downtown area is larger than the C-3 District and includes the C-3 District, South of Market, Civic Center, the Northern Waterfront, and the Washington - Broadway Special Use District (see Figure H.5). Downtown employment estimates for 1979 were developed by estimating the Down- town's share of City employment in each of the major industrial categories. These shares were then applied to the County Business Patterns employment statistics for San Francisco in 1979./9/

Table H.3 provides comparisons of the estimates for the C-3 District and Downtown area. While the numbers themselves are not directly comparable because of differences of geographic coverage, timing and definition, the percentages of City employment represented by each of

the areas are fairly comparable. For example, the larger share of government in the Downtown area reflects the Civic Center, which is not in the C-3 District. The share of retail trade in the Downtown area may be an overestimate since the 1977 Census of Retail Trade generally supports the percentage for the C-3 District (indicating 30-35 percent in the San Francisco CBD)./10/ In most other cases, the shares are relatively consistent and the differences in magnitude are in the expected direction (i.e. the share of City employment in the larger Downtown area is greater than the share in the C-3 District). This consistency points to the underlying reliability of the data given that the estimates were derived in different ways. The C-3 District percentages are the result of the comparison of citywide EDD statistics and C-3 District employment estimates (developed as described in this Appendix). The Downtown area percentages are the ratios that were applied to City employment statistics (CBP) to estimate Downtown employment.

Comparison of the amounts of employment estimated for these two areas (shown on the right side of Table H.3) indicates larger differences than might be expected. The Downtown area estimates are for two years prior to the C-3 District estimates and do not include self-employed workers (as the C-3 District estimates do). The differences in the estimates would be less than shown if the Downtown area shares were applied to EDD citywide data instead of to County Business Patterns statistics (as they were to develop these estimates). Estimated total Downtown area employment would be 309,000 instead of 341,000 if EDD data were used as the base.

TABLE H.3: COMPARISON OF C-3 DISTRICT AND DOWNTOWN AREA EMPLOYMENT ESTIMATES

Industrial Category	Estimated Percent Of City Employment In C-3 District, 1981 %	Estimated Percent Of City Employment In Larger Downtown Area, 1979 %	Estimated C-3 District Employment, 1981 No.	Estimated Downtown Area Employment, 1979 No.
Manufacturing, Mining and Agriculture	46 (mfg. and mining) 0 (agric.)	45 (mfg.) 38 (mining and agric.)	24,280	24,621
TCU	61	65	32,960	56,209
Wholesale Trade	34	40	12,470	12,136
Retail Trade	32	50	22,190	32,395
FIRE	84	85	73,810	79,016
Services	52	60	79,960	80,975
Government	20	50	17,400	44,050
Construction	32	38	7,300	11,921
TOTAL	46	58	270,370	341,323

NOTE: The 1979 Downtown employment estimates are from Working Paper I, Downtown Transportation Improvement Program, San Francisco Department of City Planning, May 1982, pages 18-19. The Downtown area includes the C-3 District, South of Market, Civic Center, the Washington/Broadway Special Use District, and the Northern Waterfront (see Figure H.5).

The 1981 and 1979 estimates are not directly comparable, as described in the text.

SOURCE: Recht Hausrath & Associates

C-3 DISTRICT EMPLOYMENT FORECASTS

Approach

There are two parts to the employment forecast methodology used in this study. One is a baseline forecast of employment growth in the C-3 District in each business activity and function from 1981 to 2000. The other is a process of matching forecast employment growth with estimates of space supplied under the land use policies embodied in the Alternatives. Each of these parts is described in this section of the Appendix, followed by a comparison of the resultant range of C-3 District employment forecasts to other recent forecasts for the City and Downtown area.

The baseline forecast is a set of employment growth projections for the years 1990 and 2000. Forecasts were prepared for each business activity and for different functions within certain business activities. The forecasts are specific to the C-3 District and may be considered to represent the long-term underlying demand for space to the year 2000, given a certain set of market conditions.

The real estate market conditions assumed for the baseline forecasts are those that have prevailed since the early 1960's. In terms of space supply and rents, this assumption implies that, as in the recent past, sites in the core of the C-3 District (essentially the financial district) would continue to be more intensively developed; the boundaries of this core area would expand; some large-scale single-tenant and speculative office development would occur on large sites in more outlying areas; and that, given this long-term supply potential, rents would remain at about their current levels, in real terms.

These market conditions would be the likely outcome of Alternative 1 policies in the C-3 District. Therefore, the baseline forecast is the employment forecast for Alternative 1.

Market conditions in the C-3 District would not be the same under any of the other Alternatives (Alternatives 2-5). The policies in the Alternatives affect both the supply (amount and location) and cost of space. (See Land Use and Real Estate Development, Section V.B and Appendix G.) They consequently affect the amount and type of employment growth that occurs in the C-3 District. Alternatives 2 through 5 constrain C-3 District development, relative to the baseline, though not all to the same degree. In the process of matching employment and space under each of these Alternatives, the baseline employment forecast for each business activity and function was always the starting point. This matching analysis resulted in the forecast of employment under each Alternative, for each business activity and function.

Note that the forecasting methodology is not sensitive to the timing of business cycles; rather, it assumes a long-term perspective. The years 1990 and 2000 were selected as analytical points at which the effects of the Alternatives would be discussed. Neither the forecasts, nor the effects of the Alternatives, can be precisely timed to specific years, however.

Baseline Employment Forecasts/Demand for Space

Baseline employment forecasts were used in this methodology to estimate demand for space in the C-3 District, for the period 1981-2000. Forecasts were prepared for 1990 and 2000 for each business activity and for functions within business activities when relevant. These distinctions were possible because of the analysis of current C-3 District employment, discussed in the preceding section of this Appendix. To establish a 1984 setting, the annual compound growth rate for the nine-year period 1981 to 1990 was applied to the three years 1981 to 1984. Depending on the timing of recovery from the current recession, 1984 employment could be below that forecast for the 1984 setting. As indicated above this study takes a long-term perspective and does not specifically address the timing of business cycles.

The forecasts for each business activity and function considered the following:

- Downtown EIR Employer Survey results
- C-3 District business activities and functions
- historical employment trends
- retail sales trends
- visitor activity trends
- recent and proposed development in the C-3 District
- relationship among business activities (e.g. office activity supports retail and hotel)
- competitive business locations
- industry trends relevant to specific business activities
- other local and regional employment forecasts
- international, national and regional market forces and
- regional and local labor supply, housing markets and transportation systems

Table H.4 shows C-3 District employment growth for each business activity for 1981 to 2000. Each of these activities is discussed in more detail in the summaries which follow. For each group, the employment forecast is presented, for 1984, 1990 and 2000 along with the 19-year (1981-2000) growth rate (expressed as an annual compound rate of growth). Important components of the forecast are highlighted, followed by the key factors used in the analysis. Tables that compare the forecast growth for the components of primary and secondary office show the contribution of the detailed business activities to overall employment growth in the C-3 District. (The description of the forecasting methodology resumes on page H.35.)

TABLE H.4: BASELINE FORECAST OF C-3 DISTRICT EMPLOYMENT GROWTH POTENTIALS

Business Activity	Forecast 2000 Employment	Employment Growth 1981-2000	Growth Rate 1981-2000
Primary Office	261,540	88,990	2.2%
Manufacturing and Mining	29,000	10,780	2.5%
Finance, Insurance Real Estate	98,630	30,050	1.9%
Business and Professional Services	84,750	44,100	3.9%
Transportation, Communications, Utilities	35,890	7,150	1.2%
Government Office	13,270	-3,090	-1.1%
Secondary Office	54,320	19,550	2.4%
Wholesale and Manufacturing Sales	24,050	10,810	3.2%
Retail Services	22,650	6,350	1.7%
Branch Banks	7,620	2,390	2.0%
Retail Trade	29,040	6,850	1.4%
Hotels	20,570	7,270	2.3%
Cultural/Institutional/Educational	10,140	2,010	1.2%
Non-Profit and Educational Facilities	3,990	1,540	2.6%
Theaters, Museums, Amusements, Institutions, Private Clubs	6,150	470	0.4%
Industrial/Warehouse/ Automotive/Parking	3,740	-3,190	-3.2%
TOTAL	379,360	121,490	2.05%

NOTE: The growth rate is the annual compound percentage rate of growth from 1981 to 2000. The employment growth shown here accounts for only those activities included in the baseline forecast. Building maintenance and construction employment are not included in the baseline forecast and are both forecast by other methods; growth depends primarily on the amount of building activity under each Alternative.

SOURCE: Recht Hausrath & Associates

Manufacturing and Mining (Primary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
18,220	19,600	22,700	29,000	2.5%

Forecast:

- 1981 C-3 District office employment distributed among executive (15%), administration/management (60%), and information processing (25%) functions.
- Forecast growth rates vary among functions. Executive functions grow faster than the overall rate (3.1% per year). Administrative functions grow at 2.5% per year. Information processing grows slower than the overall rate (2.0% per year).
- Lower rate of C-3 District growth for information processing functions accounts for expansion of this function outside the C-3 District.

Key Factors:

- Central location, image and historic associations favor C-3 District as headquarters/executive location.
- Firms with Pacific Basin connection, and those in high technology and electronics manufacturing, increasingly choose C-3 location for headquarters and executive functions. These are the growing sectors of the manufacturing, industry group that supported the 4.3% annual growth rate in the region in 1972-81 (a)

(a) State of California, Employment Development Department, Annual Average Wage and Salary Employment by County, April 9, 1982.

Finance, Insurance and Real Estate (Primary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
68,580	73,670	83,860	98,630	1.9%

Forecast:

- 1981 C-3 District office employment distributed among executive (15%), administration/management (60%) and information processing (25%) functions.
- Projected industry growth rates vary by function. Executive functions grow slowest (2% per year). Administration grows 2.5% per year, and information processing grows fastest (3% per year).
- Forecast growth in C-3 District accounts for some move-outs of existing employment and expansion outside of the C-3 District in all functional categories, most in information processing and administration. Growth of 1.9% accounts for these adjustments and reflects growth of executive functions at 1.9%, administrative functions at 2.0%, and information processing at 1.8%.

Key Factors:

- Financial district retains image and appeal. Traditional associations favor C-3 location for executive functions.
- Spatial requirements, labor needs, and changing technologies for large scale operations signal some move-outs and future expansion outside the C-3 for major financial and insurance organizations, as space in C-3 District remains more expensive relative to more suburban locations.
- Fixed investment in existing facilities in C-3 not readily abandoned, however, limiting the magnitude of move-outs of existing operations.
- Changes in market due to gradual deregulation of financial institutions supports growth from outside institutions seeking to expand their market areas.

Business and Professional Services (Primary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
40,650	47,060	63,060	84,750	3.9%

Forecast:

- 1981 C-3 District office employment includes large firms with diversified functions as well as small specialist firms.
- Forecast growth rate is slower than recent growth in City (8.55% annual compound growth, 1972-1981 (a)).

Key Factors:

- Nationwide, fastest growing sector of economy.
- Trends of the 1970's (dramatic increase in regulations and litigation) which support legal and accounting services will slow in future.
- Bay Region and Pacific Basin are growing markets for which San Francisco is central location.
- Smaller firms with less need for a central location will seek more outlying City locations as well as locations in other Bay Area cities because of the relatively high rents for space in the C-3 District.
- Some services will become more dispersed to serve developing business centers elsewhere in the Bay Area.

(a) State of California, Employment Development Department, Annual Average Wage and Salary Employment, San Francisco, April 9, 1982.

Transportation, Communication and Utilities (Primary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
28,740	29,660	31,700	35,890	1.2%

Forecast:

- Sixty percent of 1981 C-3 employment in utilities; 40% in non-utility industries (shipping, rail and other transportation, broadcasting, and telecommunications).
- 1981 C-3 employment distributed among executive (13%), administration/management (56%) and information processing (31%) functions.
- Forecast growth rates vary between utility and non-utility industries, as well as among functions.
- Utility industries forecast to have slowest growth rates: executive (1%), administration (1.5%) and information processing (2.0%). Large portion of growth, especially in information processing functions, occurs outside C-3 District. Overall forecast for utilities in C-3 District shows decline in employment.
- Growth forecast in C-3 District for non-utility industries: executive (3.1%), administration (2.5%), and information processing (2.0%).

Key Factors:

- Image and historic associations favor C-3 District as headquarters location.
- As with large, functionally diversified financial organizations, operations using large amounts of space seek locations outside C-3 District.
- Some equipment facilities fixed in C-3; others free to move to take advantage of technological improvements.
- Development of other Bay Area business centers (East Bay, Marin County) offers attractive alternative locations for all functions.

Government (Primary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
16,360	15,880	14,900	13,270	-1.1%

Forecast:

- Decline in C-3 District employment forecast in this sector.

Key Factors:

- Budgetary constraints rule out growth in local, state and Federal government offices.
- Cost-cutting measures require shifting some operations out of relatively more expensive C-3 District office space.

TABLE H.5: SUMMARY OF BASELINE C-3 DISTRICT EMPLOYMENT FORECASTS FOR PRIMARY OFFICE BUSINESS ACTIVITIES, 1981 - 2000

	Estimated 1981 Employment	Percent Of Total	Forecast 2000 Employment	Percent Of Total	Annual Compound Growth Rate 1981 - 2000
Manufacturing and Mining	18,220	11%	29,000	11%	2.5%
Finance, Insurance and Real Estate (FIRE)	68,580	40%	98,630	38%	1.9%
Business and Professional Services	40,650	24%	84,750	32%	3.9%
Transportation, Communication and Utilities (TCU)	28,740	16%	35,890	14%	1.2%
Government Office	16,360	9%	13,270	5%	-1.1%
TOTAL PRIMARY OFFICE	172,550	100%	261,540	100%	2.2%

SOURCE: Recht Hausrath & Associates

Wholesale and Manufacturing Sales (Secondary Office)

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
13,240	14,640	17,900	24,050	3.2%

Forecast:

- 1981 C-3 District office employment includes administrative and merchandising functions for manufacturers' sales representatives, as well as import/export headquarters and management functions.
- Relatively small base in 1981, but one of fastest growing sectors of C-3.

Key Factors:

- Headquarters and foreign branches of import/export firms attracted by San Francisco image.
- Expanding import/export markets (Far East) stimulate industry growth, although domestic manufacturing may decline.
- C-3 District is historical location for regional sales offices.
- Tradition and investment in special facilities (Merchandise and Apparel Marts) reduce probability of expansion elsewhere.
- Proximity to Union Square (major regional retail center) important.
- Real personal consumption expenditures expected to grow; the retail market that these industries supply will expand over time.

Retail Services (Secondary Office)

C-3 District Employment		Forecast		Growth Rate
1981	1984	1990	2000	1981-2000
16,300	17,160	19,030	22,650	1.7%

Forecast:

- 1981 C-3 District employment consists of personal, customer service functions located in office space.
- Moderate rate of growth reflects overall forecast increase in activity in C-3 District.

Key Factors:

- Many small businesses and individual decision-makers. Major shifts in location unlikely.
- Dependent on growth of employment in C-3 District, tourism, and spending by residents of the City and the rest of the region. These markets forecast to grow.
- Some growth in business occurs in existing establishments, with no increase in employment.
- Some retail services sensitive to space costs; may move some operations (or not expand) as competition for more centrally-located space increases.

Branch Banks (Secondary Office)

C-3 District Employment		Forecast		Growth Rate
1981	1984	1990	2000	1981-2000
5,230	5,550	6,250	7,620	2.0%

Forecast:

- Growth parallel to increase in C-3 office activity.

Key Factors:

- Overall growth in office employment supports growth in branch bank facilities.
- Expansion of out-of-state banks into prime downtown San Francisco market likely with progress of deregulation.
- Increased use of automatic tellers and other automated processes substitutes for some increased employment.

TABLE H.6: SUMMARY OF BASELINE C-3 DISTRICT EMPLOYMENT FORECASTS FOR SECONDARY OFFICE BUSINESS ACTIVITIES 1981 - 2000

	Estimated 1981 Employment	Percent Of Total	Forecast 2000 Employment	Percent Of Total	Annual Compound Growth Rate 1981 - 2000
Wholesale and Manufacturing Sales	13,240	38%	24,050	44%	3.2%
Retail Services	16,300	47%	22,650	42%	1.7%
Branch Banks	5,230	15%	7,620	14%	2.0%
TOTAL SECONDARY OFFICE	34,770	100%	54,320	100%	2.4%

SOURCE: Recht Hausrath & Associates

Retail Trade

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
22,190	23,200	25,370	29,040	1.4%

Forecast:

- Forecast growth in employment (1.4% per year) less than forecast growth in C-3 District sales (2.4% per year). Sales per square foot and per employee in existing retail space increase because existing stores and restaurants do more business and higher volume specialty stores and eating places replace less profitable establishments.

- Employment growth based on forecast growth in sales from three primary sources: downtown workers (31% of downtown retail spending), tourists (31% of downtown retail spending) and residents of the City and the rest of the region who are not downtown employees (38% of downtown retail spending).

Key Factors:

- Strong growth patterns in downtown retail sales during late 1970's, particularly in apparel, department store merchandise, eating and drinking out and specialty goods. Overall downtown sales growth slightly stronger than citywide sales growth. (a)

- Employment growth has lagged behind sales growth, indicating that sales per employee have increased.

- Union Square is prime retailing center for region, with major attraction in specialty shopping and high-quality department stores.

- Recent investment by new stores in Union Square in addition to upgrading by existing stores enhances downtown's retail attraction.

- Growth in office activity supports downtown retail sales growth.

- Increased tourist and convention activity generates growth in C-3 District retail activity.

- Real growth in income of City and Bay Area residents.

(a) U.S. Department of Commerce, Census of Retail Trade: Major Retail Centers in Standard Metropolitan Statistical Areas, California, 1977, and State Board of Equalization, Taxable Sales in California, annual reports 1970-1979.

Hotels

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
13,300 (a)	13,820	16,320	20,570	2.3%

Forecast:

- Growth in transient hotel employment only.

Key Factors:

- Majority of proposed hotel development in the City located in the C-3 District.
- Broad market for downtown San Francisco hotels: conventions, foreign travel, business travel, U.S. and regional travel. Attractiveness of San Francisco to all of these groups remains strong.
- Steady growth in visitors to San Francisco in late 1970's. Recent decline part of temporary cycle. Future will be continuation of growth trend. Room rates adjusted and marketing efforts increased to stimulate tourism in San Francisco.
- Moscone Convention Center draws increased convention business to San Francisco and increased tourism to C-3 District.
- Some existing hotels will be upgraded to improve their competitive position with new hotels. A higher level of services will result in increased employment in existing facilities.

(a) Includes transient and residential hotels. Estimated 1981 employment in residential hotels: 1140 or nine percent of total hotel employment.

Cultural/Institutional/Educational

C-3 District Employment		Forecast		Growth Rate
1981	1984	1990	2000	1981-2000
8,130	8,340	9,280	10,140	1.2%

Forecast:

- Group represents diverse mix of activities: some forecast to grow, others to maintain current levels.
- Low growth overall, occurring primarily in education and non-profit organizations. Entertainment also shows some growth.

Key Factors:

- Group as a whole is relatively small share of C-3 District employment; diverse types of businesses; do not generate much economic activity in themselves except for entertainment activities.
- Group as a whole dependent on overall growth of office activity, tourism and other attractions downtown.
- Education, particularly evening programs and technical classes, expected to grow in response to increased demand.
- Non-profit organizations grow as base of support (corporate and household giving) grows. Sensitive to competition for space from office uses willing to pay higher rents.
- Entertainment and other cultural facilities stimulated by Yerba Buena Center completion and increased tourist and convention business.
- Many facilities (e.g. theatres) are fixed in downtown San Francisco. Will continue to be entertainment center for region.

Industrial/Warehouse/Automotive/Parking

C-3 District Employment	Forecast			Growth Rate
1981	1984	1990	2000	1981-2000
6,930	6,510	5,640	3,740	-3.2%

Forecast:

- 1981 components of this group in C-3 are uses that are subordinate to other downtown activities (they pay less for space and generally cannot compete for central locations).
- Three-quarters of 1981 employment are in wholesale and manufacturing activities in industrial and warehouse space. The other 25 percent is in auto-related activities including parking.
- Decline forecast for this group in C-3 District.

Key Factors:

- Industrial and warehouse activities obsolete in growing C-3 District.
- Land becomes too valuable to remain in these low intensity uses.
- Employment decline is function of demand for space by other (office) activities.

C-3 District Employment Forecasts for Alternatives

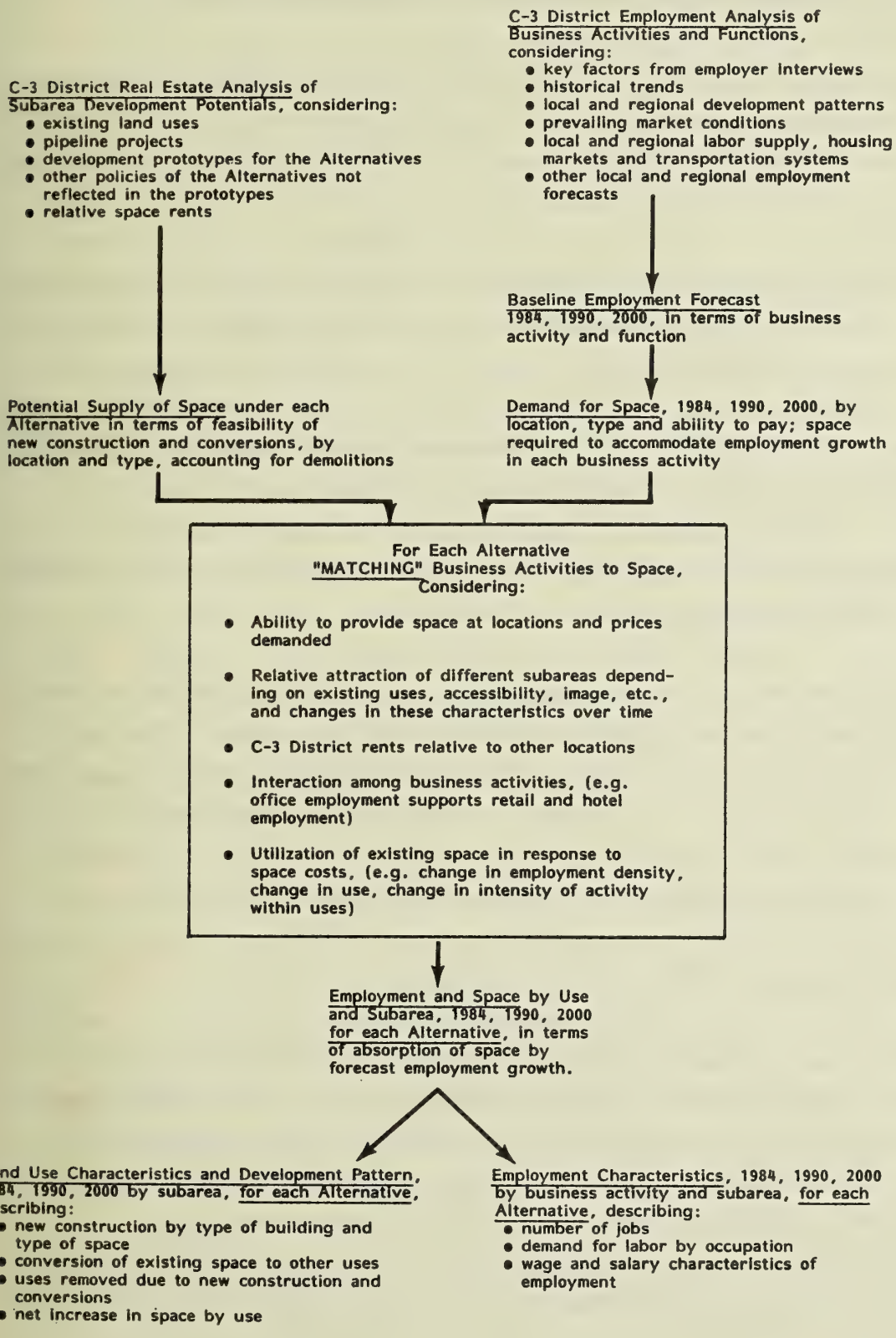
The Alternatives affect employment in the C-3 District indirectly, by means of their effect on development potential in the area. The employment forecasts for each Alternative are the result of an analytical process in which the demand for space to accommodate forecast employment growth was matched with the potential supply of space, considering the amount, location, and cost of potential new development likely under each of the Alternatives. Figure H.3 is a diagram of the "matching" process.

Conceptual Perspective

The "matching" process is a qualitative model of the market resolution of demand and supply factors affecting growth in downtown San Francisco. The perspective is that of business activities (firms or functions within firms) evaluating a location in the C-3 District. The baseline forecast identifies the space required to accommodate the growth of employment in business activities, each with different preferences for a C-3 District location and different abilities and willingness to pay rent there. The five Alternatives offer different space supply potentials in terms of the amount, location, type, and cost of newly constructed or converted space.

The result of the matching process identifies the business activities that would choose to locate in the C-3 District given the space and rent options available under each Alternative. Consideration of rents is critical to this process since rent is the means by which the market allocates space among users. The effects of the Alternatives on space are translated into differences in rents. For example, rents would be higher if the costs of construction or development were higher and tenants were willing to pay higher rents. Rents would also be higher if less space were built in a desirable location and there were users willing to pay more to outbid other uses because of strong preferences for that location. The matching analysis considers these types of

FIGURE H.3: DIAGRAM OF PROCESS OF DEVELOPING C-3 DISTRICT EMPLOYMENT AND LAND USE DEVELOPMENT FORECASTS FOR THE FIVE ALTERNATIVES



SOURCE: Recht Hausrath & Associates

differences in rents among Alternatives from the perspective of which business activities would pay higher rents and which would not.

Consideration of locations outside the C-3 District is also incorporated in this matching process. Whether business activities would pay the rents for C-3 District locations under each Alternative depends on the rents in other locations and the relative preferences placed on each locational option. The differences in employment among Alternatives reflect the outcome of this process. For example, the lower employment under Alternative 4 as compared to Alternative 1 reflects the fact that some business activities would reach the point where they would not pay the rents for a C-3 District location but would instead locate outside the C-3 District. The differences in employment by business activity identify how each activity would respond to this type of situation. The comments in Table V.C.4 in the text summarize the locational preferences of the different business activities and the impact of the Alternatives on each.

Detailed forecasts have not been prepared to identify specifically where business activities would locate if not in the C-3 District. The text discussion describes the types of locations which each might accept (see section beginning on page V.C.24). It points out that based on preferences, many could locate elsewhere in San Francisco outside the C-3 District, depending on the land use policies in those areas.

Step-by-Step Procedures

The baseline forecast of employment growth in each business activity was the starting point in this analytical process. In successive steps, the baseline employment forecasts for 1984, 1990, and 2000 were compared with the potential supply of space so that forecasts for the Alternatives would be developed for each of these three years./11/ Under each Alternative, the employment forecasts were first compared with the space to be added by projects under construction, then with

space in projects in the pipeline, and then with space in other new development as likely under the policies of each of the five Alternatives./12/ The result of this matching process was a forecast of employment and space by land use and subarea for the C-3 District in 1984, 1990, and 2000 under each Alternative. The discussion which follows highlights the important steps and conclusions drawn from this analysis.

As a first step in the matching process, 1984 employment was compared to the supply of space assuming that all projects currently under construction were completed in 1984, (and the uses demolished due to these projects)./13/ It should be noted that the forecast demand for space was sensitive to the preferences of individual business activities for the different subareas of the C-3 District and provided the basis for estimating conversions of existing space to office use. This comparison of employment and space in the C-3 District indicated that much of the space under construction in the C-3 District would be absorbed by 1984. However, there would be an oversupply of about 2.2 million sq. ft. of office space in Subarea 1, (approximately 30 percent of the total space in office buildings under construction in the C-3 District) that would not be absorbed in 1984. This space would be available for occupancy by employment growth after 1984.

As the second step, the employment growth forecasts for 1990 were compared to the overhang of unoccupied space as of 1984 and to the space that would be added in buildings in the pipeline (accounting for demolition). Considering the locational preferences and rent-paying abilities of the activities and functions forecast to grow in the C-3 District, the matching of employment growth (demand for space) with space supply indicated that the projects in the pipeline would not be absorbed until just after 1990./14/

The important conclusion to be drawn from the matching procedure to this point, was that, given the baseline employment forecasts and estimates of office space supplied through conversions from other uses, the space projected to be supplied in the C-3 District in projects under

construction and in the pipeline would not be absorbed until approximately 1990. Because it is assumed that the Alternatives would not affect this development (see Section V.B. Land Use and Real Estate Development), the forecast year 1990 becomes a second "setting" for this report./15/

After 1990, the matching process next considered the effects of the Alternatives. It has already been noted that both the baseline forecast of employment growth and the amount and location of space supplied under Alternative 1 assumed the same real estate market conditions. Therefore, the baseline forecast of employment growth is the forecast for Alternative 1. For Alternatives 2, 3, 4 and 5 forecast employment growth is less than the baseline forecast because each Alternative constrains potential development in the C-3 District, relative to Alternative 1.

The forecasts of employment in the year 2000 for each business activity for each Alternative (2 - 5) were made from the perspective of firms and functions considering San Francisco's C-3 District as a potential location for a new office or expansion of existing facilities or as a place to continue operating all or part of their current functions. Using this perspective, the forecasts incorporated the sensitivity of the various activities to locations within the C-3 District and to the relative rent levels for these locations compared to alternative locations. Matching these forecasts with development potential in subareas of the C-3 District as defined by the Alternatives resulted in forecasts of employment and occupied space for 2000, for each business activity and subarea. Detailed tables showing C-3 District employment by business activity or subarea in 2000 and the 1990-2000 forecast change are included in the fourth section of this Appendix: Supplemental Tables and Maps for Employment Analysis. Table V.C.4 in the text summarizes how the different business activities were affected by the Alternatives.

Part of the demand-based perspective on 1990-2000 development in the C-3 District under the five Alternatives was a consideration of how the employment density in both existing and new space might change

depending on the supply constraints. The employment density was not assumed to change over time in any business activity group, except in response to the supply considerations under Alternatives 2 - 5 from 1990-2000.

The Downtown EIR Employer Survey results indicated more significant variation in employment density among business activities (see Table H.2) than might ever occur over time within one business activity group. Moreover, the Employer Survey results, and these results compared to other similar studies, provided no evidence to support an assumption that average employment densities within a business activity would change in the future regardless of space supply considerations. Thus, except for supply considerations, changes over time in overall employment densities are assumed to result only from changes in the mix of business activities each with different average employment densities.

Alternative 1 policies would enable a continuation of current real estate market conditions; therefore employment densities in occupied space are assumed to remain constant for business activities from 1981 to 2000. In response to the more constrained supply situations (Alternatives 4 and 5) employment densities are assumed to increase by five percent in all business activities. Employment in existing space would become more dense as would the employment in new space, as firms would offset some of the increased cost of C-3 District space with more intensive use of that space. In Alternative 3, employment densities are assumed to increase by one-and one-half percent (relative to Alternative 1 or the 1981 densities). In Alternative 2, employment densities are assumed to increase by one-half percent. As discussed in the text (Section V.C. Employment) the consequence of increased density (and of the change in the mix of business activities, with different densities, in the C-3 District) is that Alternatives 2 through 5 do not constrain employment growth as much as they do the development of new space in the C-3 District.

The preceding discussion applies particularly to primary and secondary office activities. While the same considerations were given to other business activities, employment in the other groups is also dependent on the level of growth in the dominant activity--office. Consequently, employment in the year 2000, for other business activity groups, was forecast after the process of matching office employment to office space, and reflected the level and pattern of C-3 District office development under each Alternative.

The forecasts of retail sales and of new hotel space incorporate the demand for these activities that results from the forecasts of office employment growth under each Alternative. There are other components of these forecasts, however, which are largely independent of office activity (e.g. tourism, and retail spending by those not employed downtown). Each component was separately considered in developing the forecasts for the Alternatives. The next subsection describes the retail forecasting process.

Retail Forecast

Forecasts of retail employment and space were based on a forecast of retail sales growth in the C-3 District from 1981 to 2000. The forecast of retail sales growth was completed after the forecasts of employment and space described by the matching process, because retail sales in the C-3 District are dependent on the results for the other sectors. In particular, the retail forecast for the C-3 District depends on growth in office employment and on increases in tourist spending in the C-3 District.

The sources of C-3 District sales can be broadly grouped into three categories:

- C-3 District workers;
- tourists;
- others, including San Francisco residents and other Bay Area residents who do not work in the C-3 District but do some shopping there.

The forecast or retail sales growth is based on projected growth for each of these sources of C-3 District retail sales. First, however, the contribution each group currently makes to C-3 District retail sales was established.

The estimate of downtown retail spending from C-3 District workers was based on spending patterns identified in the 1975 SPUR Study, Impact of Intensive High-Rise Office Development on San Francisco (pages 252-261). The SPUR survey of office workers included a section on spending for various retail goods; the Downtown EIR Employee Survey did not ask any questions about retail spending. For this analysis, the SPUR data for office workers were adjusted to reflect average spending by all workers, based on income differentials. Total downtown retail sales supported by C-3 District workers was then calculated using these ratios./16/ When compared to the total estimated retail sales in the C-3 District (based on analyses of the 1977 Census of Retail Trade and Taxable Retail Sales data), this calculation indicated that the spending of C-3 District workers supported about 31 percent of total C-3 District retail sales.

For the share of C-3 District retail sales supported by tourism, an estimate was made using San Francisco Convention and Visitors Bureau data for 1981. Spending by people staying in San Francisco hotels is estimated by the Convention and Visitors Bureau for several categories, including lodging, eating and drinking out, retail stores, transportation, and entertainment. The retail share (including eating and drinking out) of this overall tourist spending was estimated. Using the share of San Francisco hotel rooms located in the C-3 District and assumptions about the proportion of tourists' retail spending that occurs in the C-3 District, depending on whether or not they are staying in the C-3 District, an estimate of C-3 District retail sales supported by tourists staying in San Francisco was calculated. Comparing this estimate to the estimate of total C-3 District retail sales indicated that tourism supported about 31 percent of total retail sales.

The implication of these estimates of the spending downtown by C-3 District workers and by tourists was that the balance, about 38 percent, of C-3 District retail sales came from other sources. Among the other sources are spending by San Francisco and other Bay Area residents who do not work in the C-3 District.

Baseline forecasts of retail sales growth were prepared for each of the above-described sources. Average retail sales per C-3 District worker were assumed to remain constant over time and the amount of sales to increase in proportion to the employment growth in all business activities forecast under the baseline assumptions. Retail sales growth due to tourism was forecast assuming sales increased in proportion to the employment forecast for transient hotels. Retail sales attributable to spending by Bay Area residents and other visitors was forecast to increase somewhat as a share of total C-3 District retail spending.

The baseline forecast of C-3 District retail sales growth from all of these sources reflects an annual compound growth rate of 2.4 percent, in constant dollars. This forecast assumes that the attraction of the downtown retail core continues to increase over time. Page H.31 outlines the key factors considered in this forecast of strong retail growth. Among the three components, sales from tourism increase at a somewhat faster rate than the average (2.57 percent per year, compounded). Spending by residents and others increases at the average rate. Spending by C-3 District workers would increase at a somewhat lower rate than the average (2.13 percent per year, compounded).

Employment in retail establishments is assumed to grow at a slower pace than sales, about 1.4 percent per year, compounded. Sales per sq. ft. and sales per employee are assumed to increase over time. For the 1984 setting, these sales and employment forecasts were matched with retail space in projects under construction, according to assumptions about sales per sq. ft. and employment densities in retail space. A similar process resulted in the 1990 forecast of sales, employment and space.

For the Alternative forecasts, it was assumed that retail spending by residents and other visitors would not vary among Alternatives. The tourist component of C-3 District retail spending is somewhat lower in Alternatives 4 and 5, reflecting the reduced supply of C-3 District hotel rooms in these cases. The principal effect of the Alternatives on the C-3 District retail forecast is their effect on the number of people employed in the C-3 District. Retail sales would be lower in those Alternatives in which C-3 District employment and, consequently, retail spending by C-3 District workers, is forecast to be lower.

The effect on retail sales of new housing in the C-3 District and the difference in C-3 District housing produced under each Alternative were also considered. In general the net effect on downtown retail spending of C-3 District housing would be the net increment of spending attributable to residency in the area, primarily convenience shopping and perhaps to some additional eating and drinking out. Since many of the new residents would work in the C-3 District whether or not they lived there, other types of spending are already accounted for in the forecast of worker spending. For those new C-3 District residents who do not work in the C-3 District, other spending is already accounted for in the forecasts of spending by Bay Area residents and others who do not work downtown, to the extent that they would have lived elsewhere in San Francisco or elsewhere in the region and would have otherwise done some spending downtown.

Rough estimates of this increment were prepared. In the Alternative with the most additional C-3 District housing, Alternative 4, the estimated net additional retail spending was less than one percent of total forecast retail sales in the C-3 District, indicating that the additional housing forecast in the area would not add substantially to total retail sales there.

The following tables present the forecasts of retail activity developed for this study. Table H.7 shows estimates of total C-3 District retail sales, employment, and space for 1981, 1984, 1990 and 2000 by Alternative. Table H.8 shows the projected changes in retail sales,

TABLE H.7: C-3 DISTRICT RETAIL ACTIVITY, 1981, 1984, 1990, AND 2000, BY ALTERNATIVE

				2000 By Alternative				
	1981	1984	1990	1	2	3	4	5
Retail Sales (Millions of Constant 1982 Dollars)	$1,200.0	$1,292.5	$1,500.7	$1,868.9	$1,864.1	$1,858.3	$1,828.5	$1,830.2
Retail Employment	22,190	23,200	25,370	29,040	28,960	28,460	28,000	28,030
Retail Space (Thousands of Gross Sq. Ft.)	7,756	8,220	8,949	10,288	10,192	9,945	9,766	9,773

SOURCE: Recht Hausrath & Associates

TABLE H.8: CHANGE IN C-3 DISTRICT RETAIL ACTIVITY, 1981-84, 1984-90, 1990-2000, BY ALTERNATIVE

			1990-2000 By Alternative					Percentage Change 1990-2000 By Alternative				
	1981-84	1984-90	1	2	3	4	5	1 %	2 %	3 %	4 %	5 %
Retail Sales (Millions of Constant 1981 Dollars)	$92.5	$208.2	$368.2	$363.4	$357.6	$327.8	$329.5	24.5	24.2	23.8	21.8	22.0
Retail Employment	1,010	2,170	3,670	3,590	3,090	2,630	2,660	14.4	14.2	12.2	10.4	10.5
Retail Space (Thousands of Gross Sq. Ft.)	464	729	1,339	1,243	996	817	824	15.0	13.9	11.1	9.1	9.2
Increase in Sales as Percent of Baseline Forecast			100%	99%	97%	89%	89%					
Increase in Employment as Percent of Baseline Forecast			100%	98%	84%	72%	72%					
Increase in Space as Percent of Baseline Forecast			100%	93%	74%	61%	61%					

SOURCE: Recht Hausrath & Associates

retail employment and retail space for each Alternative. The table also compares the 1990-2000 percentage change in each category, among Alternatives. The first line of the table indicates the strong retail sales growth forecast for all Alternatives. Increases in retail employment and retail space are each somewhat less, as highlighted by the comparisons of each forecast to the baseline.

Sales are forecast to continue strong, and are not as affected by the Alternatives as are retail employment and space for several reasons. There would be less of an increase in retail space in those Alternatives in which less new office buildings (containing some retail space) would be built. There are only a limited number of suitable sites for major free-standing retail development. At the same time, retail spending by C-3 District workers would not be reduced proportionally to the lesser amount of office space, because employment densities (in both existing and new office space) are forecast to increase. Consequently, there would be more spending to support higher levels of sales in existing and new retail space under those Alternatives with lower amounts of new office development.

Construction and Other Business Activities

Construction and building maintenance employment, as well as employment in industrial, warehouse, automotive, parking and miscellaneous business and retail service activities were less dependent on the matching process itself. Employment growth in construction activities was estimated as a function of the total new building, conversion and upgrading activity that would occur under each Alternative. (See Figure H.2 and Table H.19 in Supplemental Tables for Employment Analysis.) Building maintenance and security employment was calculated according to the total square footage of space in the year 2000, under each Alternative.

Lastly, forecasts of industrial, warehouse, automotive, parking and miscellaneous business and retail service employment were treated as residuals of the matching process. C-3 District employment in these

activities is expected to decline as demand for space from other uses increases. Forecasts for the year 2000 were developed based on both the displacement of these uses for new construction and the conversion to office use of space occupied by these activities.

Comparisons With Other Forecasts

Employment forecasts have been prepared recently for the City and for the Downtown area (the area including the C-3 District, South of Market, Civic Center, Northern Waterfront, and the Washington/-Broadway Special Use District as shown on the map in Figure H.5). The citywide forecasts were prepared by the Association of Bay Area Governments (ABAG) based on an analysis of historical trends for employment in the City and the region. The Downtown area forecasts were prepared by the Department of City Planning based on the shares of citywide employment growth (from the ABAG forecast) expected to occur in the Downtown area. A comparison of these two forecasts and the C-3 District employment forecasts prepared for this study is presented in Table H.9. The table also shows ABAG's employment forecast for the Bay Region.

Review of these forecasts indicates that there are differences among them. In terms of the overall amount and rate of employment growth, the C-3 District forecasts are more optimistic about future growth than are the Downtown and citywide forecasts. Although the C-3 District is included within the Downtown area and the City totals, the C-3 District employment growth forecasts are higher or as high as the growth forecast for these larger areas.

The total employment figures for the different forecasts for 1990 and 2000 appear more consistent than the growth estimates. However, they are not necessarily comparable because the base year employment data come from different sources as explained earlier in this Appendix./17/

TABLE H.9: COMPARISON OF EMPLOYMENT FORECASTS (Employment in Thousands)

	1981	1990	2000	Growth 1981-2000	Annual Compound Growth Rates 1981-2000	Actual Growth Rates 1972-1981
C-3 District (a)	270.4	327.9	371.9-392.6	101.5-122.2	1.69-1.98%	Higher Than Citywide Rates
Downtown (b)	349.9	391.5-397.4	437.0-460.1	87.1-110.2	1.18-1.45%	NA
Total City (b)	594.3	641.8-646.2	699.2-722.9	104.9-128.6	0.86-1.04%	2.41%
Bay Region (c)	2,465.2	2,969.6	3,567.1	1101.9	1.96%	3.64%

NOTE: All C-3 District estimates reflect the analysis done for this study. Other San Francisco estimates were prepared by the Department of City Planning and the Association of Bay Area Governments (ABAG). The regional forecasts were prepared by ABAG. The total employment estimates for 1981, 1990 and 2000 for each area are not directly comparable because of the different base year sources. The growth rates inherent in the forecast methodologies are comparable across all areas, however. (See note 17.)

(a) The range for 2000 reflects the range of employment forecasts for the Alternatives as shown in this report. The low end is Alternative 4 and the higher end is Alternative 1. The figures include construction employment, assuming the annual average estimates.

(b) Forecasts for Downtown and total San Francisco are from Working Paper I, Downtown Transportation Improvement Program, San Francisco Department of City Planning, May 1982, pages 18-20. Employment for 1981 was estimated as two years growth at the rate of growth for the 1979 to 1990 period, assuming the expected forecast. For the City total, the 1981 estimate is thus not the same as the EDD total City employment data shown in Table IV.C.4. For 1990 and 2000 the low end of the range reflects the expected forecast and the high end the trends/maximum forecast. The map in Figure H.5 shows the boundaries of the downtown area (which includes the C-3 District, South of Market, Civic Center, Northern Waterfront, and the Washington/Broadway Special Use District).

(c) Forecasts for the region are from Long Term Forecasts for the San Francisco Bay Area, Association of Bay Area Governments, February 1982, as revised June, 1982. Employment for 1981 was estimated as one year of growth at the rate for the 1980 to 1985 period.

SOURCE: Recht Hausrath & Associates.

The approach and methodology for the C-3 District employment forecasts differ from those used in the other forecasting efforts, primarily because the different forecasts were prepared for different purposes. The C-3 District forecasts had to be developed so as to be sensitive to the provisions of the five Alternatives. This required that the forecasts be developed from the perspective of the business activities and functions in the C-3 District. As explained earlier in this Appendix, the methodology involved consideration of many historical, present, and future demand and supply factors with emphasis on the effect of future space availability and rents on the location decisions of business activities of various types.

The ABAG forecasts were developed using a more quantitative approach that provided equations of long-term employment growth for the City of San Francisco dependent entirely on historical trends. The effects of some demand and supply factors were indirectly incorporated in the forecasts to the extent that they were reflected in recorded employment statistics. The employment analysis was done to prepare citywide forecasts; the City forecasts were then disaggregated to estimate Downtown employment growth.

The differences in the forecasts are highlighted by comparison of the forecasts for different economic sectors. These comparisons can be made only on the basis of Standard Industrial Classifications (SIC) because the business activity groups used in this study were not used in the other forecasts. Table H.10 provides comparisons of the growth rates implied by the forecasts for each sector. It includes the growth rates by business activities and functions which make up the SIC forecasts for the C-3 District. The table also provides for comparison of each forecast with the actual citywide growth for the 1972-1981 period.

The largest differences among the forecasts are in four sectors: manufacturing, wholesale trade, services, and transportation, communications, and utilities (TCU).

TABLE H.10: COMPARISON OF EMPLOYMENT FORECASTS BY SECTORS (Annual Compound Growth Rates)

Standard Industrial Classification (a)	Actual Citywide Growth 1972-1981 (b)	City Forecast 1979-2000 Per ABAG (c) (Expected Forecast)	Downtown Forecast 1979-2000 Per DCP (c) (Expected Forecast)	C-3 District Forecast 1981-2000 (Baseline Forecast)		
Manufacturing (d)	+0.36	-2.80	-5.06	+1.95	incl.: headquarters office	+2.48
					wholesale functions	+3.00
					industrial functions	-4.05
Wholesale Trade	+0.30	-3.72	-4.63	+2.00	incl.: office functions	+3.24
					industrial functions	-4.06
Finance, Insurance Real Estate (FIRE)	+3.68	+1.81	+1.94	+1.94	incl.: executive functions	+1.89
					administration	+1.99
					data processing	+1.80
					branch banks	+2.00
Transportation, Communications, Utilities (TCU)	+0.21	+2.04	+2.33	+1.35	incl.: utility	-0.03
					non-utility	+2.46
Services	+5.15	+1.40	+1.66	+2.97	incl.: business and professional	+3.80
					retail services	+1.03
					hotel	+2.32
					building maintenance	+2.21
Government	+0.32	-0.10	-0.04	-1.04		
Retail Trade	+2.94	+0.85	+1.09	+1.42		

TABLE H.10: COMPARISON OF EMPLOYMENT FORECASTS BY SECTORS
(Annual Compound Growth Rates) (Continued)

NOTE: The employment growth rates shown here are not directly comparable. There are differences in the forecasting period and in the geographic areas included. The direction and relative magnitudes can be compared, however. The growth rates shown are the expected cases for the City and Downtown area forecasts and the baseline forecast for the C-3 District. The differences shown would be reduced if a lower growth alternative were chosen for the C-3 District or if the maximum case were used for the other forecasts. The comparisons between sectors would still be similar.

(a) Not all industries are shown here. Construction and agriculture are omitted as is mining in all figures except the C-3 District forecast.

(b) State of California Employment Development Department (EDD), Annual Average Wage and Salary Employment, March 11, 1981 series. The period 1972-1981 is used here since it is the time for which a consistent series of employment figures is available.

(c) Forecasts for Downtown and total San Francisco are from Working Paper I, Downtown Transportation Improvement Program, San Francisco Department of City Planning, May 1982, pages 18-20. See map in Figure H.5 for the boundaries of the Downtown area (which includes the C-3 District, South of Market, Civic Center, Northern Waterfront, and Washington/Broadway Special Use District).

(d) The C-3 District forecast includes manufacturing and mining since manufacturing employment was not separately forecast. This is unlikely to distort the comparison of growth rates.

SOURCE: Recht Hausrath & Associates

For manufacturing and wholesale trade, the C-3 District forecasts reflect growth of employment while the ABAG and DCP forecasts show a decline in employment for the larger Downtown area and for the City. In terms of numbers of jobs, the differences among forecasts are large. From 1979 to 2000, the ABAG and DCP forecasts show a decline of 40,000 jobs in the City and a decline of 23,000 jobs in the Downtown area. The C-3 District forecast expects growth of 23,000 jobs from 1981 to 2000. The C-3 District forecast reflects the growth of manufacturing and wholesale trade located in office space and a decline in these activities in industrial space. Since the office activities represent the majority of C-3 District employment in these groups, the forecasts show job growth. The Downtown area and City forecasts show a continuing, large decline in employment in both of these sectors, probably reflecting the historic declines in the City's industrial activities. These forecasts do not appear to anticipate that growth in office activities would offset future declines in industrial activities. The employment statistics for the 1972-1981 period seem to indicate that historic declines were leveling off and were offset by growth in office activities during the 1970's.

For TCU employment, the C-3 District forecast indicates a lower rate of growth than the other forecasts show for the Downtown area and the City. The C-3 District forecast specifically assumes that some functions within this group would locate outside San Francisco in future years although they may have located in the City in the past. The other forecasts appear to reflect the historic trends. The amounts of TCU employment growth for each forecast indicate greater differences than do the growth rates because there are also differences in the estimates of the base year TCU employment between the EDD figures (more similar to the C-3 District forecast) and the CBP figures (used by ABAG and DCP). The result is forecast growth of 9,500 jobs for the C-3 District, 35,000 jobs for the Downtown area, and 46,000 jobs for the City.

The third area of relatively large difference is in the forecasts for services. All three forecasts show lower growth in services than occurred in the recent past. Only the C-3 District forecast includes

separate forecasts for the different types of services. Among the forecasts, the C-3 District analysis shows the most growth, most of which is expected in hotels and in business and professional services. Since this latter group includes about half of total service employment in the C-3 District, the forecasts show large overall growth of services. The growth for the C-3 District is forecast at about 60,000 jobs, while the Downtown forecast shows 33,500 jobs, and the citywide forecast reflects the growth of 46,000 jobs. The Downtown area and City forecasts for service employment reflect a substantial slowing of growth from the recent past. Not only is the rate of growth assumed to slow from over five percent to about one and one-half percent per year, but the citywide forecast of 46,000 more jobs over 21 years is less than the 56,000 job growth which occurred in San Francisco in the nine years from 1972 to 1981./18/

The three forecasts for employment in retail trade, in government, and in finance, insurance, and real estate are fairly comparable. The larger decline forecast for government employment in the C-3 District could reflect shifts of activity from the central areas to the Civic Center and south of Market Street. Thus, it is consistent with fairly stable government employment in these other areas. The higher growth fore- cast for retail trade in the C-3 District could reflect the strength of Union Square and the Moscone Center in attracting retail sales. If so, somewhat lower rates of growth would be expected for retail employment in the larger Downtown area and the City overall. The forecasts for FIRE are very similar and show slightly stronger growth Downtown and in the C-3 District, as compared to the rest of the City.

JOB AND WORKFORCE CHARACTERISTICS: CURRENT AND FORECAST

Approach

Section IV.C (Business and Employment) discusses the characteristics of C-3 District workers from two perspectives. The first is that of the types of jobs (occupations and wages and salaries) located in the C-3

District. The second is that of the types of workers (individual and household demographics) employed in the C-3 District. This section of the Appendix explains the methodology for the current estimates, provides more detailed tables than those presented in the text, and explains the basis for the forecasts of future C-3 District job characteristics.

Current C-3 District Job Characteristics

The Downtown EIR Employer Survey was the source of information on the types of employment located in the C-3 District. Each of the 58 business establishments in the sample submitted an occupation and wage/salary matrix for the employees working in the facility selected in the sample. Figure H.4 reproduces the matrix. Typical jobs in the occupation categories are listed below:

Professional, technical or similar worker: accountant, computer specialist, lawyer, social worker, musician, actor, medical personnel, labor or personnel relations.

Manager or administrator: bank officer or financial manager, buyer or shipper, or any type of office, personnel or sales manager.

Clerical or similar worker: bank teller, counter clerk, bookkeeper, administrative assistant, vehicle dispatcher, receptionist or secretary, typist or keypunch operator.

Crafts or similar worker: carpenter, printer, electrician, mechanic or automobile repair.

Operative or similar worker: dressmaker, service station attendant, machine operator, delivery person, truck or bus driver.

Sales worker: real estate agent or broker, sales clerk, insurance stocks or bond seller.

Service worker: cleaner, janitor, waiter or waitress, welfare service aid or watchman.

The matrix covered all employees at the establishment. If the establishment selected was one facility of a larger organization with other offices in downtown San Francisco, the information provided was only for employees working in the sampled building. In large facilities, the

FIGURE H.4: DOWNTOWN EIR EMPLOYER SURVEY OCCUPATION/WAGE SALARY MATRIX

Name of Firm _____

First estimate the proportion of your firm's/agency's workers (at the building selected) that falls within each of the occupational categories (Column 1). Then, for each occupational category, estimate the proportion of employees that falls within each wage rate category (Rows 1-8).

	Column 1		Wage Rate Categories:					
	Occupational Categories	Proportion of Employees in Each Occu. Cat.	less than $12,000 (%)	$12,000-$14,999 (%)	$15,000-$24,999 (%)	$25,000-$49,999 (%)	$50,000-$74,999 (%)	$75,000+ (%)
Row 1	Prof./ Technical							
Row 2	Managerial/ Admin.							
Row 3	Sales Workers							
Row 4	Clerical Workers							
Row 5	Service Workers							
Row 6	Skilled Craftsmen							
Row 7	Operatives							
Row 8	Other Non-farm Labor							

NOTE: Form can be filled in with number of employees or percent in each category. If use percent, please indicate total number of employees in space provided.

TOTAL NUMBER OF EMPLOYEES _____

matrix covered all of the employees in the selected establishment even if only a subsample of them were included in the Downtown EIR Employee Survey. (Appendix F describes the sampling methodology for the Employee Survey.)

The matrix responses (generally expressed as proportions) were converted to numbers of employees in each occupation and wage/salary category, based on the total employment reported by the employer. The numerical responses were weighted to adjust for differential probabilities of selection inherent in the survey sampling procedure./19/

The establishments (and consequently their employees) were grouped according to business activity. The sum of the weighted responses in each matrix cell was calculated for all establishments in each business activity. These calculations produce distributions of occupations and of wages and salaries for each business activity in the C-3 District./20/

Tables H.11 and H.12 present more detailed distributions of occupations and wages and salaries for C-3 District employment than are shown in the text (Table IV.C.7). The detail is presented only for business activities in office space, however. Office employment dominates the description of job characteristics in the C-3 District. The survey sample size for the industry components of primary and secondary office are large enough to show detailed distributions. There are no important distinctions to be made in either the retail trade or hotel categories. The sample sizes of establishments in the cultural/-institutional/educational and industrial/automotive/parking categories are too small to show more detail. (The distributions for the non-office categories are shown in Table IV.C.7.)

Forecasts of Job Characteristics

The Survey results indicated large variation in occupations and wages/-salaries between business activities. These differences are greater than the changes which might be assumed to occur within a business activity over time. Moreover, there are no historical data from which to

TABLE H.11: DISTRIBUTION OF OCCUPATIONS FOR DETAILED OFFICE ACTIVITIES, 1981

Business Activity	Occupations						
	Professional/ Technical %	Managerial/ Administrative %	Clerical %	Sales %	Service %	Crafts/ Operatives %	Total %
Primary Office	33.4	20.1	37.2	3.1	0.8	5.4	100.0
Manufacturing and Mining	28.4	18.4	28.0	3.5	0.6	21.1	100.0
FIRE	26.1	23.1	43.8	5.7	0.1	1.2	100.0
executive/administrative	27.2	24.8	47.4	0.2	0	0.4	100.0
information processing	23.9	18.6	53.2	0.6	0.2	3.5	100.0
Business and Professional Services	53.0	12.3	25.7	0	0	9.0	100.0
TCU	24.3	28.9	40.0	3.0	1.3	2.5	100.0
Government Office	36.3	13.8	43.0	0.1	5.4	1.4	100.0
Secondary Office	6.7	34.6	22.4	5.8	1.8	28.7	100.0
Wholesale and Manufacturing Sales	0	67.1	19.4	13.5	0	0	100.0
Retail Services	14.2	13.5	7.7	1.3	3.9	59.4	100.0
Branch Banks	0	18.0	76.0	0	0	6.0	100.0

NOTE: Distributions based on results of Downtown EIR Employer Survey.

SOURCE: Recht Hausrath & Associates

TABLE H.12: DISTRIBUTION OF WAGES AND SALARIES FOR DETAILED OFFICE ACTIVITIES, 1981

Business Activity	Wages and Salaries (1982 dollars)						
	Less Than $12,000 %	$12,000-14,999 %	$15,000-24,999 %	$25,000-49,999 %	$50,000-74,999 %	$75,000-And Above %	Total %
Primary Office	8.1	12.3	36.6	30.5	7.2	5.3	100.0
Manufacturing and Mining	3.3	14.4	37.3	32.6	10.4	2.0	100.0
FIRE	14.5	16.6	32.5	22.1	3.1	11.2	100.0
executive/administrative	12.6	13.4	34.5	20.8	3.7	15.0	100.0
information processing	19.4	26.3	26.0	27.4	0.9	0	100.0
Business and Professional Services	4.2	6.4	38.3	35.3	14.0	1.8	100.0
TCU	1.5	6.0	42.2	40.4	8.6	1.3	100.0
Government Office	7.6	17.3	38.8	34.1	2.1	0.1	100.0
Secondary Office	21.8	17.4	21.3	32.8	3.3	3.4	100.0
Wholesale and Manufacturing Sales	0	8.3	13.0	64.3	6.6	7.8	100.0
Retail Services	38.7	14.4	29.5	15.3	1.1	1.0	100.0
Branch Banks	24.2	50.0	16.7	7.6	1.5	0	100.0

NOTE: Distibutions based on results of Downtown EIR Employer Survey.

SOURCE: Recht Hausrath & Associates

measure trends in changes in job characteristics within business activities. Much of the change in occupational and wage/salary mix downtown has occurred because the mix of business activities (jobs with various characteristics) has changed.

The distributions of occupations and wages/salaries within a business activity group were not assumed to change over time. For example, the forecast of the number of managerial jobs in 2000 was derived by applying the percentage of managerial jobs (identified by the Survey) in each business activity group to the total employment forecast for that business activity group in the year 2000. The sum of these products is the forecast total managerial jobs in 2000.

The overall distribution of occupations and wages/salaries in the forecast years (1990 and 2000) does change as the mix of business activities (each with different distributions) changes. If the occupation mix within business activities were to change (due to technological changes or increased specialization of C-3 District functions within the functional categories of the business activities, for example) then the forecast changes in job characteristics between 1981 and 2000 would be greater than estimated in this report. To some extent, the presence of such trends could be offset by the availability of workers with certain backgrounds and characteristics, effectively resulting in the distributions forecast here. This would be true since the availability of labor has some affect on the location and expansion decisions of business activities.

NOTES - Employment Analysis

/1/ Information on employment and space was gathered for establishments picked in the sample but who refused to participate in the interview. This information was also used in the development of employment estimates.

/2/ The employment densities used to illustrate the procedure are hypothetical. Actual estimated employment densities for these groups are listed in Table H.2 and discussed later in this Appendix.

NOTES - Employment Analysis (Continued)

/3/ The Employer Survey sample did identify some existing vacant space in the C-3 District. For example, the Lincoln School building at Fifth and Market Street (the upper floors above ground floor retail space are vacant) was one of the survey sample selections. Another upper story selection in Subarea 6 also proved to be vacant space. Therefore, employment was not estimated for a share of the office space in Subarea 6.

/4/ The employment densities for the major categories can be related to types of space in proposed projects. In some cases, the densities of the components cannot be used unless the tenants of the space are known.

If the employment density factors are used to estimate the employment growth associated with the addition of space in new buildings, consideration should be given to an allowance for vacant unoccupied space. Since the density factors in Table H.2 do not include vacancies, they would not be applied to the total new addition of space but to the occupied percent of it (95-98 percent) depending on the vacancy assumed. Alternatively, the employment densities could be calculated to include a vacancy factor as explained in note 5.

/5/ For example, if vacant space was included in the ratios, the employment density for primary office activities of 276 sq. ft. per employee would be 285 sq. ft. per employee if three percent of total office space in this category was vacant.

/6/ Building maintenance and security personnel who are employees of the single or prime tenant in a downtown building would have been covered by the sampling methodology. This is clearly the case with the hotels in the sample.

/7/ SPUR, Impact of Intensive High Rise Development on San Francisco: Detailed Findings, June, 1975, p. 90. The ratio used in the SPUR study was confirmed: Gary Craft, Milton Meyer & Company, telephone communication, July 31, 1981, per information from Milton Meyer's building operations division. This ratio is also consistent with the annual maintenance and operating costs used in the real estate development feasibility analysis.

/8/ Both County Business Patterns and State Employment Development Department statistics do not cover self-employed workers. County Business Patterns statistics are compiled from Internal Revenue Service annual reports based on quarterly forms submitted by employers. Employment Development Department statistics are compiled from quarterly reports submitted by employers for state unemployment insurance records. Self-employed workers generally do not file comparable forms and thus are not included in the summary tabulations from either source.

NOTES - Employment Analysis (Continued)

The 1981 estimates of employment by business activity in the C-3 District do cover self-employed workers. To compare C-3 District estimates to published citywide statistics, an estimate of total self-employed workers in the City was prepared. (See Table IV.C.4.) The appropriate industry groups for these workers are not known, however.

/9/ A survey similar to the Downtown EIR Employer/Employee Survey was recently conducted in the South of Market/Folsom Area not included in the C-3 District. The results of this survey could be used to provide more information on employment and business activity in that area.

/10/ The area defined in the Census of Retail Trade as the San Francisco CBD includes the financial district, Union Square, part of the Tenderloin, Civic Center, and blocks between Market and Howard Streets from 11th Street to the Embarcadero. A map of this area is presented in Figure H.6 at the end of this Appendix.

/11/ It is important to understand that the forecasting methodology follows the logic that space is built to accommodate employment growth and not vice versa. Constraints on the supply of space can lower employment growth, but a lack of constraints on new development cannot result in more employment growth than is supported by other economic market factors.

/12/ See Section V.B Land Use and Real Estate Development and Appendix G for description of the space in projects under construction and those in the pipeline and for an explanation of the real estate analysis of development potentials under each Alternative. The process of matching employment growth and space involved the use of employment densities to convert jobs into space and incorporated consideration of a vacancy factor so that the amount of space needed to accommodate a given amount of employment growth exceeded the space to be occupied by the increased number of workers. Appendix G describes the vacancy factors.

/13/ As previously explained, the employment forecasting methodology assumed a long-term perspective. To establish a 1984 employment setting, the annual compound growth rate for the nine-year period 1981 to 1990 was applied to the three years 1981 to 1984. A short-term employment forecast reflecting recovery from the current recession was not prepared.

/14/ It was estimated that by 1990 only about 346,000 sq. ft. of office space in Subarea 1 would not be absorbed if all the projects under construction and in the pipeline were built. This is only about 3.5 percent of the total new space in pipeline office projects in the C-3 District. This oversupply is so small relative to the amount of employment growth forecast that it cannot be assumed to indicate a significant oversupply.

NOTES - Employment Analysis (Continued)

/15/ It should be noted that the matching process could have resulted in some other year, either earlier or later than 1990, being the second "setting". For example, if forecast employment growth were greater (or the space supplied in the pipeline and through conversions were less) the space supplied would be absorbed in the late 1980's.

/16/ Analysis of SPUR data on spending patterns, the results of the Downtown EIR Employer and Employee Surveys, and the employment analysis of business activities was undertaken to provide estimates of retail spending for different categories of C-3 District workers. Wages and salaries and residence patterns for C-3 District employees in different business activities were considered. The average C-3 District retail spending for all C-3 District workers is estimated, from this analysis, to be $1,600 per worker (in 1981 dollars).

/17/ As explained earlier in this Appendix, the base data describing employment in San Francisco differ depending upon whether the state EDD or federal CBP data are used. Generally, the CBP figures, used as the base year (1979) for the Downtown and citywide employment forecasts, show higher employment in San Francisco. The EDD figures, which appear to be more similar to the C-3 District estimates, show lower base year employment. The employment forecasts for 1990 and 2000 shown in Table H.7 may not be comparable because of these differences in the base year figures. For example, the 1990 employment totals would be lower if different estimates were used for the base year even if the same amount of growth were forecast.

/18/ See Table IV.C.6 in the text. It is recognized that the 21 year forecast (1979-2000) overlaps the nine year historic period (1972-1981). However the figures in the Appendix text are included to make the general point that the forecasts reflect a substantial slowing of recent growth.

/19/ The weights applied to the responses from each establishment were the same weights used in the C-3 District employment estimating procedure described in the first part of this Appendix. The survey appendix (Appendix F) details the rationale and calculations for the Employer Survey weight factors.

/20/ It is possible to combine the two distributions for analysis of the wage and salary mix within an occupational category, within a business activity. This enables some comparison across business activities of the relative proportions of entry level jobs (jobs at the lower end of the wage/salary scale, requiring minimal education or experience) and how the levels of education, experience and/or training (measured by relative wages and salaries) required for occupations of interest differ by business activity. This three-dimensional table is not shown, however, because the number of observations in any one cell (clerical employees in the $12,000 -

NOTES - Employment Analysis (Continued)

14,999 salary range working in a bank headquarters, for example) are too few for reliable description of that group. The disaggregated information was the basis for some analysis of skill levels and was also the basis from which the two-dimensional tables (occupations by business activity and wages/salaries by business activity) were constructed.

SUPPLEMENTAL TABLES AND MAPS FOR EMPLOYMENT ANALYSIS

TABLE H.13: C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY, 1981, 1984, 1990

Business Activity	1981		1984		1990	
	No.	%	No.	%	No.	%
Primary Office	172,550	65.6	185,870	66.2	216,220	67.0
Secondary Office	34,770	13.2	37,350	13.3	43,180	13.4
Retail	22,190	8.4	23,200	8.3	25,370	7.9
Hotel	13,300	5.1	13,820	4.9	16,320	5.1
Cultural/Institutional/ Educational	8,130	3.1	8,340	3.0	9,290	2.9
Industrial/Warehouse Automotive/Parking	6,930	2.6	6,500	2.3	5,640	1.7
Building Maintenance/ Security	5,200	2.0	5,780	2.0	6,510	2.0
TOTAL	263,070	100.0	280,860	100.0	322,530	100.0

NOTE: See Table H.19 for construction employment

SOURCE: Recht Hausrath & Associates

TABLE H.14: C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY AND ALTERNATIVE, 2000

Business Activity	2000 By Alternative									
	1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%
Primary Office	261,540	67.6	259,530	67.6	257,010	67.7	247,120	67.2	248,470	67.4
Secondary Office	54,320	14.0	53,600	13.9	52,930	13.9	50,820	13.8	51,590	14.0
Retail	29,040	7.5	28,960	7.5	28,460	7.5	28,000	7.6	28,030	7.6
Hotel	20,570	5.3	20,570	5.4	20,570	5.4	20,210	5.5	20,210	5.5
Cultural/Institutional/Educational	10,140	2.6	9,890	2.6	9,890	2.6	9,110	2.5	9,260	2.5
Industrial/Warehouse Automotive/Parking	3,740	1.0	3,740	1.0	3,300	0.9	5,270	1.4	4,120	1.1
Building Maintenance/ Security	7,880	2.0	7,780	2.0	7,600	2.0	7,110	2.0	7,140	1.9
TOTAL	387,230	100.0	384,070	100.0	379,760	100.0	367,640	100.0	368,820	100.0

NOTE: See Table H.19 for construction employment.

SOURCE: Recht Hausrath & Associates

TABLE H.15: C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981, 1984, 1990

Subarea	1981		1984		1990	
	No.	%	No.	%	No.	%
1	139,660	54.1	151,680	55.1	178,600	56.5
2	19,250	7.5	20,620	7.5	22,960	7.3
3	10,560	4.1	12,320	4.5	13,850	4.4
4	15,350	6.0	15,360	5.6	15,410	4.9
5	26,200	10.2	27,030	9.8	30,670	9.7
6	36,430	14.1	37,600	13.7	43,480	13.7
7	10,420	4.0	10,470	3.8	11,050	3.5
Total by Subarea	257,870	100.0	275,080	100.0	316,020	100.0
Unallocated	5,200		5,780		6,510	
TOTAL	263,070		280,860		322,530	

NOTE: Includes permanent employment only, of which building maintenance/security is not allocated by subarea. See Table H.19 for construction employment, also unallocated.

SOURCE: Recht Hausrath & Associates

TABLE H.16: C-3 DISTRICT EMPLOYMENT BY SUBAREA AND ALTERNATIVE, 2000

Subarea	2000 By Alternative									
	1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%
1	209,100	55.1	206,650	55.0	202,350	54.5	206,170	57.2	203,120	56.1
2	31,250	8.2	31,380	8.3	29,200	7.8	26,590	7.4	28,400	7.9
3	19,530	5.2	19,520	5.2	20,410	5.5	15,690	4.4	16,100	4.5
4	17,610	4.7	17,500	4.7	18,790	5.0	16,970	4.7	17,570	4.9
5	38,440	10.1	38,160	10.1	39,150	10.5	34,060	9.4	35,930	9.9
6	50,460	13.3	50,230	13.3	49,800	13.4	49,010	13.6	48,530	13.4
7	12,960	3.4	12,850	3.4	12,460	3.3	12,040	3.3	12,030	3.3
Total by Subarea	379,350	100.0	376,290	100.0	372,160	100.0	360,530	100.0	361,680	100.0
Unallocated	7,880		7,780		7,600		7,100		7,140	
TOTAL	387,230		384,070		379,760		367,640		368,820	

NOTE: Includes permanent employment only, of which building maintenance/security is unallocated. See Table H.19 for construction employment, also unallocated.

SOURCE: Recht Hausrath & Associates

TABLE H.17: CHANGE IN C-3 DISTRICT PERMANENT EMPLOYMENT BY BUSINESS ACTIVITY, 1981-1984, 1984-1990 AND 1990-2000, BY ALTERNATIVE

Business Activity	1981-1984		1984-1990		1990-2000 By Alternative									
					1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Primary Office	13,320	74.9	30,350	72.8	45,320	70.0	43,310	70.4	40,790	71.3	30,900	68.5	32,250	69.7
Secondary Office	2,580	14.5	5,830	14.0	11,140	17.2	10,420	16.9	9,750	17.0	7,640	17.0	8,410	18.2
Retail	1,010	5.7	2,170	5.2	3,670	5.7	3,590	5.8	3,090	5.4	2,630	5.8	2,660	5.7
Hotel	520	2.9	2,500	6.0	4,250	6.6	4,250	6.9	4,250	7.4	3,890	8.6	3,890	8.4
Cultural/Institutional/Educational	210	1.2	950	2.3	850	1.3	600	1.0	600	1.1	(180)	(0.4)	(30)	(0.1)
Industrial/Warehouse/Automotive/Parking	(430)	(2.4)	(860)	(2.1)	(1,900)	(2.9)	(1,900)	(3.1)	(2,340)	(4.1)	(370)	(0.8)	(1,520)	(3.3)
Building Maintenance/Security	580	3.2	730	1.8	1,370	2.1	1,270	2.1	1,090	1.9	600	1.3	630	1.4
TOTAL	17,790	100.0	41,670	100.0	64,700	100.0	61,540	100.0	57,230	100.0	45,110	100.0	46,290	100.0

NOTE: See Table H.19 for construction employment.

SOURCE: Recht Hausrath & Associates

TABLE H.18: CHANGE IN C-3 DISTRICT EMPLOYMENT BY SUBAREA, 1981-1984, 1984-1990 AND 1990-2000, BY ALTERNATIVE

Subarea	1981-1984		1984-1990		1990-2000 By Alternative									
					1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	12,020	69.8	26,920	65.8	30,510	48.2	28,060	46.5	23,760	42.4	27,580	62.1	24,530	53.8
2	1,370	8.0	2,340	5.7	8,290	13.1	8,420	14.0	6,240	11.1	3,630	8.1	5,440	11.9
3	1,760	10.2	1,530	3.7	5,680	9.0	5,670	9.4	6,560	11.7	1,840	4.1	2,250	4.9
4	10	0.1	50	0.1	2,190	3.4	2,090	3.5	3,370	6.0	1,550	3.5	2,150	4.7
5	830	4.8	3,640	8.9	7,790	12.3	7,490	12.4	8,480	15.1	3,390	7.6	5,260	11.5
6	1,170	6.8	5,880	14.4	6,970	11.0	6,750	11.2	6,320	11.2	5,530	12.4	5,050	11.1
7	50	0.3	580	1.4	1,910	3.0	1,790	3.0	1,410	2.5	990	2.2	980	2.1
Total by Subarea	17,210	100.0	40,940	100.0	63,330	100.0	60,270	100.0	56,140	100.0	44,510	100.0	45,660	100.0
Unallocated	580		730		1,370		1,270		1,090		600		630	
TOTAL	17,790		41,670		64,700		61,540		57,230		45,110		46,290	

NOTE: Includes permanent employment only, of which building maintenance/security is not allocated by subarea. See Table H.19 for construction employment, also not allocated.

SOURCE: Recht Hausrath & Associates

TABLE H.19: C-3 DISTRICT CONSTRUCTION EMPLOYMENT, ANNUAL AVERAGE 1981-2000, BY COMPONENT

Components	1981-1984	1984-1990	1990-2000 By Alternative				
			1	2	3	4	5
New Construction	2,140	1,980	1,550	1,500	1,230	810	740
Conversion	40	30	40	40	40	small	30
Upgrading	2,210	2,460	2,870	2,840	2,810	2,730	2,730
Project Management	880	890	890	880	820	710	700
TOTAL	5,270	5,360	5,350	5,260	4,900	4,250	4,200

NOTE: The employment estimates in this table represent person-years of construction labor supported by the various component activities, not numbers of workers. Consequently, these estimates are not directly comparable to the other employment estimates presented in this analysis.

SOURCE: Recht Hausrath & Associates

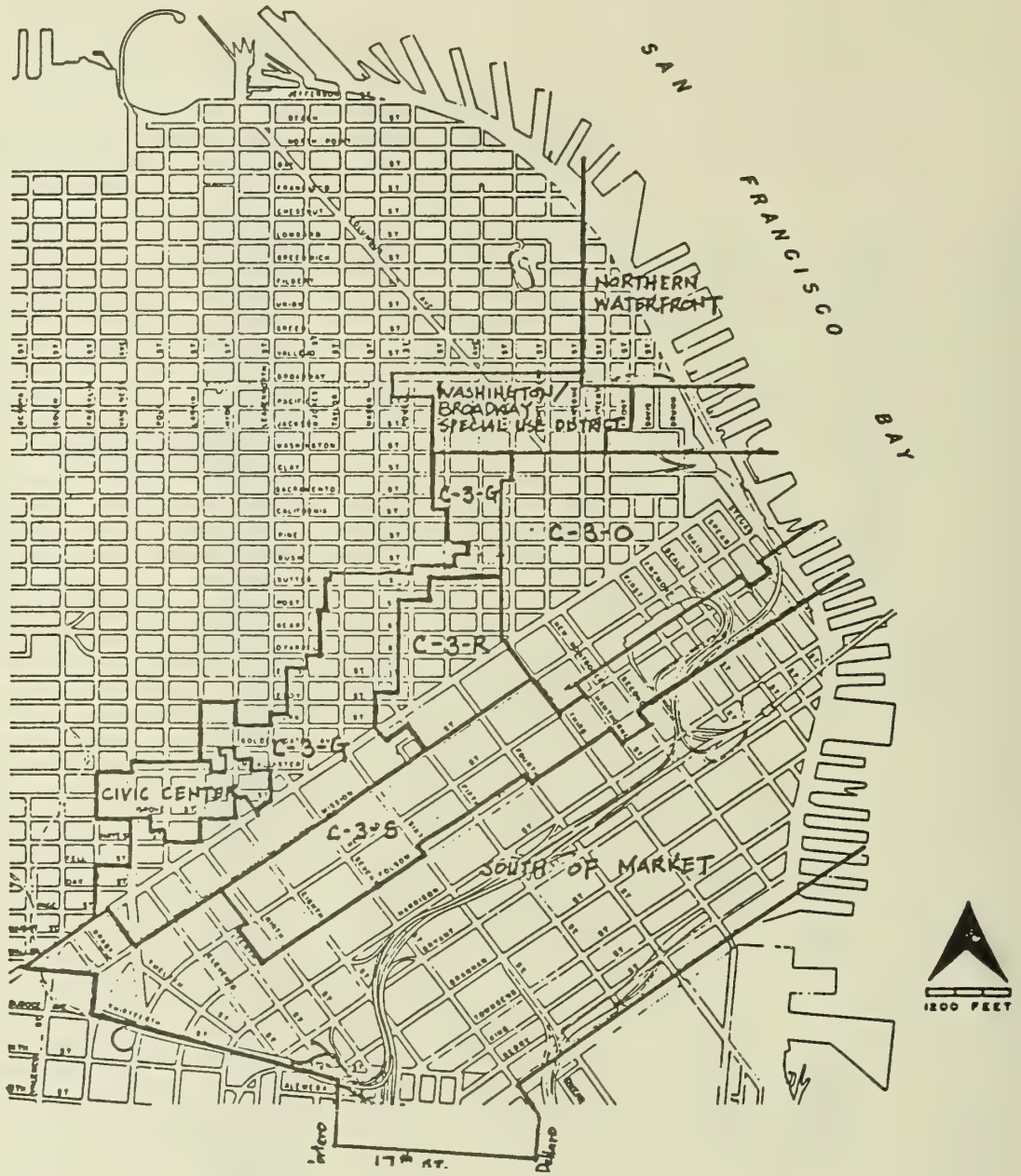


FIGURE H.5:
DOWNTOWN STUDY AREA USED IN DEPARTMENT OF CITY PLANNING FORECASTS

SOURCE: Recht Hausrath & Associates



FIGURE H.6:
BOUNDARIES OF SAN FRANCISCO CENTRAL BUSINESS DISTRICT USED IN CENSUS OF RETAIL TRADE

SOURCE: Recht Hausrath & Associates

APPENDIX I: THEORETICAL DISCUSSION OF HOUSING MARKET EFFECTS/METHODOLOGY FOR FORECASTING RESIDENCE PATTERNS

INTRODUCTION

Appendix I describes the theoretical basis for considering the implications of employment growth on the housing market in San Francisco and describes the assumptions and analysis behind the forecasts of future residence patterns of C-3 District workers. The appendix is divided into three sections. Each section is presented as background for the housing analyses done for this study. The sections include the following, in the order presented:

- A summary description of the relationship between employment growth and housing markets. This section provides a description of the basic economic theory relevant to this subject, and as such provides the basis for much of the analysis done to consider the housing market impacts of C-3 District job growth.
- An overview of the methodology for forecasting future residence patterns of C-3 District workers. This section supplements the discussion in the impact section (Section V.D) and also presents the results of sensitivity analysis done to test the implications for residence patterns of different assumptions and forecasts about other factors besides C-3 District employment growth.
- Supplemental tables to provide more detailed tabulations of the forecasts of future residence patterns, particularly concerning changing residence patterns for workers in different business activities.

RELATIONSHIP BETWEEN EMPLOYMENT GROWTH AND HOUSING MARKETS

Stated very simply, and generally, there is a relationship between employment growth and housing markets. The basis for this relationship lies in economic and housing market theory. Similarly, there is a relationship between employment growth in San Francisco and the City's housing market. The theoretical basis for the generalized relationship applies in this specific case as well.

Much of the debate about the relationship between employment growth and housing markets does not concern whether such a relationship exists. Rather, the points of debate often focus on the nature of a particular situation in a specific market context and geographic area. The problem is not with the theory but with our ability to document a particular situation. Except in theory, it is difficult to isolate and measure the effect of only one of the many factors (employment) affecting housing markets. Further, it is difficult in practice to focus on the role of C-3 District employment growth (as a subgroup of all city or all regional employment growth) in affecting San Francisco's housing market (as a subgroup of all housing within the region).

The Generalized Relationship

The relationship between employment growth and housing markets can be described most clearly by discussing the generalized situation. Essentially, this provides a summary of the basic theory relevant to this subject. (This may be understood more easily if one thinks in terms of a large regional area and not a city within a region as is the case for San Francisco.)

Generally the relationship is as follows:

- Employment growth means growth of employed labor.

  The number of workers newly employed equals the number of new jobs (except in cases of part-time positions or workers holding two jobs). The individuals newly employed do not necessarily work at the new jobs (there is constant turnover whereby existing workers change jobs).

- Growth of employed labor means population growth to provide that labor.

  The amount of population growth could be less than needed to accommodate the growth of employment to the extent that there is increased labor force participation or a reduction in unemployment./1/

- Population growth means growth of households which means increased demand for housing.

  The amount of housing demanded depends on how the increment of population groups into households (affected by workers per household and persons per household). The type, price/rent, and location of housing demanded depends on the demographic and income characteristics of the new households (not just the new workers), as well as on other factors affecting financial resources available for housing and housing preferences.

- Households seeking housing initially add to the demand for the existing stock of housing. This can mean that new units are then supplied of the types and prices/rents demanded by the new households. The supply will be expanded if the prices/rents of units demanded cover the costs of supplying these new units and provide a competitive return to the housing developer/investor. If the supply expands to accommodate increased demand, market prices/rents for units of various types will not necessarily be affected by employment growth. Employment growth would mean more residents and more housing, however.

- If housing is not built to directly accommodate increased demand, (the more likely situation), then a series of market interactions occurs. Initially, there is increased competition for the existing housing of the types that meet the demand of the additional worker households. Increased competition would mean increased prices/rents for existing housing. The amount of increase depends on the magnitude of the imbalance between demand and supply and on the extent to which there are consumers willing and able to pay higher prices.

  Those who do pay higher prices secure their preferred units, and those who do not must look for other housing. This can result in a series of interactions whereby households who are unwilling or unable pay for the housing in greater demand look to their next most acceptable housing choices. This increases competition for that housing and could result in increased prices/rents there. This "chain reaction" continues to occur as consumers make housing choices depending on what they are willing and able to pay for products of various types.

  Somewhere along this series of market interactions, it is or becomes (as prices/rents increase) feasible to expand the supply of housing. Ultimately, the supply is expanded to accommodate the increased number of households. It can be expanded by building new housing, dividing existing housing into more units, or by upgrading or converting units that

were not being used for housing. It is also possible that the occupancy of existing housing could increase (in which case the number of additional units is less than the number of additional households). It is also possible that there is feedback to employment growth whereby the lack of appropriate housing could make it difficult to attract labor. This effect was considered in developing the employment forecasts for the Alternatives.

The result of these market interactions could be an increased number of households, an increased supply of housing, and higher prices/rents for housing. It could be higher average overall prices/rents, if prices had to increase in order to make it feasible to expand the supply. The increase in prices/rents could have occurred fairly extensively throughout the housing market, affecting units of many different types and in varied price ranges. The increases could also affect some types and prices of housing more than others. Generally, the effects of increased demand continue to "filter down" until the market is able to make the adjustments needed to expand the supply. Often, those who are affected most by increased housing costs or who must make the most sacrifices are those with fewer resources and less ability to compete for housing.

- The description above points out that the addition of housing supply releases the market pressure contributed by increased demand. At what point along the filtering process the supply is expanded makes a difference in terms of the effects on different segments of the market (i.e. prices/rents could still be higher for some types of housing or consumers although the increase in supply moderates the effects on other types of housing and other consumers).

Complicating Factors

The previous discussion describes the basic process whereby housing markets adjust to increases in housing demand. Increases in employment mean increased housing demand which means that adjustments in supply must eventually occur. However, this basic relationship is complicated by several factors:

- At any one time, other factors besides employment are contributing to changes in the demand of housing. These other factors could result in increases in the amount of housing demanded and/or in changes in the demand for housing of

various types and prices and at various locations. Because of these other factors, it is difficult to isolate the sole effects of employment growth. Further, the effects of employment growth can differ depending on other demand factors. These other factors can include a variety of demographic, lifestyle, job-related, and investment reasons.

- Separate from the factors affecting housing demand, there are other factors affecting the market's ability to supply housing in response to changing demand. These factors are separate from employment growth yet they are important in determining the housing market impacts of employment growth. Examples of these factors are the land use policies which determine what can be built in certain areas, the financial factors which determine the cost and availability of money for housing construction and for housing purchases, and the commitment of national priorities to housing. As we have seen, these types of factors have had a major effect on the housing market of the past few years.

- Within a large housing market, there are many housing submarkets. A submarket includes both the consumers with relatively similar housing preferences and the supply of housing which meets those preferences. The series of market interactions which can occur as the market adapts to increased demand (described above) is traced as it affects different submarkets. Because of the large number of housing submarkets, the market interactions which are constantly occurring are complex and sometimes difficult to trace in practice, although they can be described theoretically. For example, the housing products which may be acceptable to consumers in a particular submarket (defined by housing type, price/rent, and type of location) may not be located in the same geographic area (for example, the substitutes for housing in some San Francisco neighborhoods may be housing in Marin or in the east bay).

The Concern For San Francisco's C-3 District

When the question of the relationship between employment growth and housing markets is raised within the context of San Francisco's C-3 District there are still further complexities. The additional complexities arise because San Francisco is only one part of the larger Bay region. Three factors are particularly important.

- By concern for the housing market effects of C-3 District employment growth or C-3 District office employment growth, the focus is on a defined subgroup of the increased housing demand resulting from employment growth. Thus, in addition to the effects of changes in other housing demand factors, the housing market impacts of C-3 District employment growth are also affected by the increases in demand from other employment growth, namely that in the rest of the City and the rest of the region.

- By concern for the impacts on San Francisco's housing market, housing in the City must be considered separately from housing elsewhere in the region. This adds complexities since the increased demand for housing because of downtown employment growth includes demand for areas outside of San Francisco as well. Further, housing supply in San Francisco overlaps with housing elsewhere in the region in serving consumers in various housing submarkets. To focus only on City housing requires division of these submarkets.

- By concern for the effects of a subgroup of regional employment growth (C-3 District) and a segment of the region's housing market (San Francisco housing), consideration must be given to both the effects of a net increase in the number of jobs on the amount of housing required in the region, and the effects of the location of job growth on the distribution of the region's households among housing locations throughout the region. In other words, it is not just a question of adding households, but one of where the housing is added and of how existing workers and households "reshuffle" themselves throughout the region. All of the changes which could occur throughout the region are very difficult to trace.

  For example, those newly employed in the region because of C-3 District job growth would not necessarily be employed in the new jobs, in the C-3 District, or even in San Francisco, since there is constant turnover as existing workers change jobs. Similarly, those newly employed in the C-3 District would not necessarily be in the households that are new to the region or even new to San Francisco. Further, if those who change jobs change their place of residence as well, they may not make both moves at the same time. Even if these two decisions are related, they could occur at very different times, often because the housing decision is influenced by many other factors besides place of employment. The situation is further complicated by multiple-worker households in which the workers do not work in the

same city. Even if place of work plays an important role in choosing housing, the housing may not be in the same city as either job but someplace in-between.

Describing And Forecasting This Relationship

As described in the summary statement at the beginning of this section, it is easier to describe the theoretical relationship between employment growth and housing than it is to develop data and information to describe a particular situation. This subsection highlights the types of descriptions that are possible.

Basically, the relationship between employment growth in the C-3 District and San Francisco's housing market can be described in the following ways:

- A theoretical description of the relationship can be written.
- Data can be used to quantitatively describe:
  - the residence patterns of C-3 District workers among counties within the region;
  - the demographic, household, and housing characteristics of C-3 District workers by the county in which they live;
  - the distribution of employed San Francisco residents among places of work, and the number and type of City residents working in the C-3 District;
  - the number and type of jobs in the C-3 District;
  - the overall distribution of population, labor force, housing, and employment throughout the region;
  - changes in the characteristics of the City's housing market over time (number and type of units, prices/rents);
  - changes over time in the demographic and household characteristics of the City's population, including changes in the place of work of residents;
  - changes over time in the number and type of jobs in the C-3 District and in the rest of the City; and

- changes over time in the overall distribution of population, labor force, housing, and employment throughout the region.

In each case, the changes that can be observed as having occurred over time are net changes resulting from the influence of many factors. The situation is very dynamic and very complex. People are constantly changing jobs, changing housing, and moving in and out of the region for a variety of reasons. The influence of any one factor, such as employment growth, can be considered only qualitatively and involves some judgement.

- Forecasts can be prepared of future residence patterns and consideration can be given to the effects on the housing market of future employment growth. These would be based on analysis of the theory and of the types of data listed above. The forecasts could quantify the number of C-3 District workers likely to reside in San Francisco in the future given assumptions and forecasts about how other factors besides C-3 District employment growth are likely to change over time. Alternatives for C-3 District job growth could be tested to evaluate the effects on residence patterns of more or less future downtown employment. Consideration could then be given, qualitatively, to how the availability of housing in San Francisco and how prices and rents of City housing could be affected by future job growth. The result would not be a simple statement of "cause and effect", but rather a reasoned set of conclusions of how future job growth, within the context of many other local, regional, and national factors, could affect San Francisco's housing market.

The items listed above were completed as parts of the housing analysis done for this study. They are described in different sections of this report. A summary of the theoretical description of the relationship between employment growth and housing markets was presented in the beginning of Appendix I. Data and information developed to describe relevant current conditions are presented in the housing and employment setting sections (Sections IV.D and IV.C). Much of the analysis done to identify the changes which have occurred and the recent trends which will influence future conditions is summarized in the first part of the housing impact section (Section V.D). The forecasts of future residence patterns and the implications for housing and population in San Francisco are also presented in the housing

impact section (Section V.D). Further description of the methodology for forecasting future residence patterns and results of sensitivity analysis to test the implications of alternate assumptions and forecasts are presented in the next part of Appendix I. More detailed tables summarizing the forecasts are presented at the end of the appendix.

METHODOLOGY FOR FORECASTING RESIDENCE PATTERNS

Approach

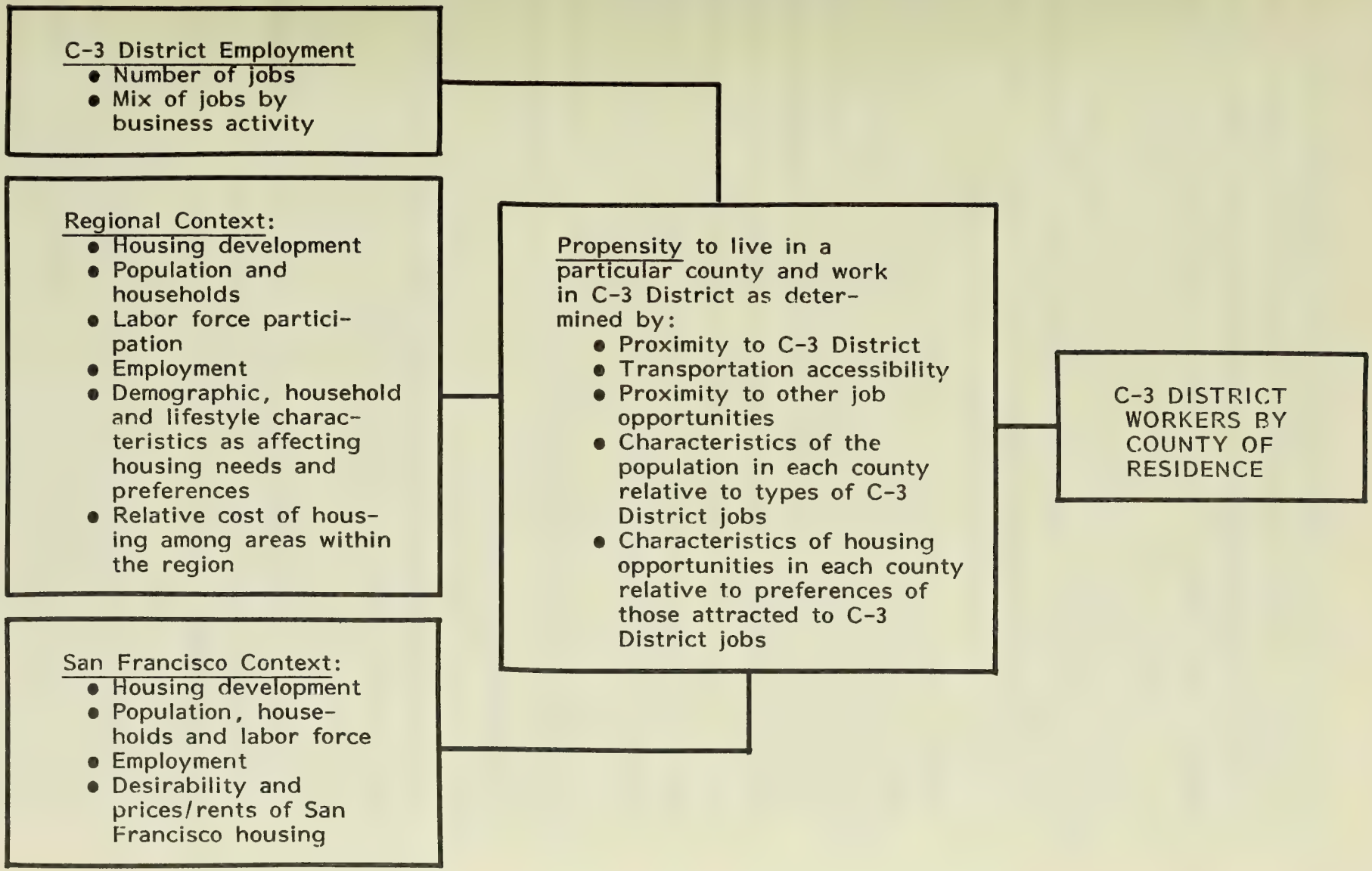
The forecasts of future residence patterns of C-3 District workers were prepared by considering changes in the number and type of C-3 District jobs within the context of forecasts and assumptions about how other factors besides C-3 District employment are likely to change over time. The diagram in Figure I.1 summarizes the types of factors considered.

Among the four types of factors identified in Figure I.1, the number of jobs of various types in the C-3 District is important since different jobs employ workers with different demographic and household characteristics and different housing preferences. The regional context is important from the perspective of how the region's labor force is likely to increase over time and to be distributed among counties, throughout the region. It is also important in terms of employment growth elsewhere in the region. C-3 District employers will compete with businesses in other locations in attracting labor from throughout the region.

The future context for San Francisco is a specialized case within the regional context. Special attention is focussed on San Francisco because of its importance in supplying labor for C-3 District jobs, because the C-3 District Alternatives affect housing supply in San Francisco, and because the analysis of impacts on housing and population in San Francisco is of particular interest in this study.

FIGURE I.1: DIAGRAM OF FACTORS CONSIDERED IN FORECASTING FUTURE RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS

FIGURE I.1: DIAGRAM OF FACTORS CONSIDERED IN FORECASTING FUTURE RESIDENCE PATTERNS OF C-3 DISTRICT WORKERS



SOURCE: Recht Hausrath & Associates

The fourth major factor considered is the "propensity" to live in a particular county and work in the C-3 District. It defines the extent to which those employed in the C-3 District are drawn from the labor supply in each county. In other words, the San Francisco and regional contexts identify the future supply and distribution of labor and jobs. The propensity factor identifies the likelihood that the C-3 District will compete successfully for that labor. It identifies the share or percentage of labor in various locations which could be reasonably expected to work in the C-3 District.

Analysis of all of these factors produced a forecast of future residence patterns of C-3 District workers. It is important to understand that the forecasts describe what is likely to occur in the future given C-3 District job growth and changes in all of the various factors considered. As such the forecasts are likely future outcomes. They do not identify the C-3 District workers who might want to live in each county or who might demand housing at various locations. Instead, the forecasting process considers how all of the relevant factors are likely to combine in producing a particular future result.

Procedures for Estimating Future Conditions

C-3 District Employment

The C-3 District employment forecasts are described in detail in Section V.C, Employment Impacts, and in Appendix H. The forecasts of residence patterns were done on the basis of employment by business activities and then aggregated to produce the forecasts of employees by county that are displayed in the text.

Regional Context

A number of sources provided information on the regional context. Census data, building permit data, employment statistics, and other housing market information were gathered and combined to summarize changes which have occurred over the past ten and 20 years in the

amount and distribution of housing, population, and labor force throughout the region. Future forecasts of these factors were collected and reviewed within the context of recent trends. Much of the forecast information is from the regional forecasts of the Association of Bay Area Governments (ABAG).

Of particular importance is the future distribution of housing throughout the region. Table I.1 summarizes the past and future amount and distribution of housing. The percentages indicate the share of the region's total housing and of housing growth located in each county./2/

Analyses of population and labor force trends were combined with the housing forecasts to estimate the future distribution of labor throughout the region. These estimates are summarized in Table I.2. The percentage distributions of employed persons by place of residence indicate how the region's workforce is likely to be distributed throughout the Bay Area counties by the year 2000.

The estimates illustrate the increasing relative importance of the east bay and the north bay in housing the workforce of the region. They also show the large amount of growth expected throughout the region and particularly in the east bay and the south bay./3/ The regional totals reflect an increase in workers of about 43 percent over the next 20 years for a compound rate of growth of 1.8 percent per year. This reflects a slower rate of growth than the 3.3 percent per year experienced during the 1970's when the region's labor force increased by 38 percent in just 10 years.

These distributions are approximate, order-of-magnitude estimates developed for purposes of illustrating the likely future distribution of employed labor among the counties of the region. They are not based on detailed analysis of each county or of all the factors involved. The forecasts for San Francisco were developed in more detail as a part of the future context for San Francisco that is described in the next subsection of this appendix.

The estimates in Table I.2 of future employed residents in 1990 and 2000 for all counties except San Francisco were derived by assuming the ABAG housing forecasts shown in Table I.1 and by assuming certain changes in the 1980 ratios of employed persons per housing unit as derived for each county from 1980 Census data. The changes over time in the ratios of employed persons per housing unit reflect changes in the overall labor force participation of residents of each county. The latter assumption combines changes in the mix of population in their working years with changes in the labor force participation of persons in those age groups. The estimates developed and shown here are of employed persons, not the labor force. The labor force is larger than the number of employed persons to the extent that there are unemployed individuals. It should also be noted that by developing overall ratios of employed persons per housing unit, an average housing vacancy factor is incorporated. Trends in the number of employed persons per household were also incorporated in this analysis.

To primarily reflect a somewhat slower increase in labor force participation in the future, the growth of employed persons per housing unit from 1980 to 1990 and 1990 to 2000 is expected to be lower than the growth reflected by the changes in these ratios during the 1970's. From 1980 to 1990, the ratios were assumed to increase by 80 percent of the increase experienced from 1970 to 1980. From 1990 to 2000, a range was developed by assuming either no further change in the ratios after 1990 or a further increase by 75 percent of the increase from 1980 to 1990. The 1990 to 2000 figures shown in the table are judgemental estimates, often taken as the midpoint of that range. The future ratios of employed persons per housing unit were applied to the total number of housing units in the future (not just those newly developed), so the estimates of future employed persons reflect both the growth of housing and population and the changing characteristics of the total population.

The results of the estimates developed as described above were compared with recent forecasts of the regional labor force prepared by ABAG. The growth of employed persons estimated for this study represents about 92 percent of the growth of the labor force from the

TABLE I.1: SUMMARY OF CHANGES IN THE AMOUNT AND DISTRIBUTION OF HOUSING THROUGHOUT THE REGION, 1970, 1980, and 2000

Counties	Total Housing Units Percent of Region 1970 %	1980 %	2000 %	Housing Growth Percent of Region 1970-80 %	1976-1981 %	1980-2000 %	Total Units 1980	Housing Growth 1980-2000
San Francisco	19.1	15.4	12.9	1.4	4.7	4.6	316,608	30,000
Alameda	23.3	21.6	21.0	15.1	15.0	19.1	444,607	125,950
Contra Costa	10.9	12.2	13.4	17.0	19.5	17.7	251,951	116,506
Solano	3.3	4.1	5.9	7.0	10.0	11.0	84,270	72,160
Napa	1.7	1.9	2.0	3.0	2.0	2.2	40,052	14,420
San Mateo	11.8	11.3	10.5	9.7	7.6	7.1	233,200	46,866
Santa Clara	20.7	23.0	23.3	31.4	27.8	24.6	473,817	161,741
Marin	4.4	4.5	4.3	4.8	3.5	3.5	92,649	23,140
Sonoma	4.8	6.0	6.7	10.6	9.9	10.2	124,189	67,353
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	2,061,343	658,136
San Francisco	19.1	15.4	12.9	1.4	4.7	4.6	316,608	30,000
East Bay (a)	39.2	39.8	42.3	42.1	46.5	50.0	820,880	329,036
South Bay (b)	32.5	34.3	33.8	41.1	35.4	31.7	707,017	208,607
North Bay (c)	9.2	10.5	11.0	15.4	13.4	13.7	216,838	90,493
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	2,061,343	658,136

NOTE: The 1970 and 1980 figures are from Census data. The housing growth figures for 1976-1981 represent building permits issued during that period. The 2000 forecasts are prepared by ABAG and reported in their Projections 1979 report.

(a) Includes Alameda, Contra Costa, Solano, and Napa counties.
(b) Includes San Mateo and Santa Clara counties.
(c) Includes Marin and Sonoma counties.

SOURCE: Recht Hausrath & Associates

TABLE I.2: SUMMARY OF CHANGES IN THE NUMBER AND DISTRIBUTION OF EMPLOYED RESIDENTS THROUGHOUT THE REGION, 1970, 1980, and 2000

Counties	Employed Persons by Place of Residence (000)			Employed Persons by Place of Residence Percent of Region			Growth of Employed Residents Percent of Region	
	1970	1980	2000	1970 %	1980 %	2000 %	1970-1980 %	1980-2000 %
San Francisco	318	342	398	17.4	13.6	11.1	3.5	5.2
Alameda	417	515	700	22.9	20.5	19.5	14.1	17.3
Contra Costa	211	305	460	11.6	12.1	12.8	13.6	14.4
Solano	50	90	195	2.7	3.6	5.4	5.8	9.8
Napa	29	43	60	1.6	1.7	1.7	2.0	1.6
San Mateo	241	314	405	13.2	12.5	22.3	10.5	8.5
Santa Clara	409	661	950	22.4	26.2	26.5	36.4	27.0
Marin	81	117	170	4.5	4.6	4.7	5.2	5.0
Sonoma	68	130	250	3.7	5.2	7.0	8.9	11.2
Total	1,824	2,517	3,588	100.0%	100.0%	100.0%	100.0%	100.0%
San Francisco	318	342	398	17.4	13.6	11.1	3.5	5.2
East Bay (a)	707	953	1,415	39.8	37.9	39.4	35.5	43.1
South Bay (b)	650	975	1,355	35.6	38.7	37.8	46.9	35.5
North Bay (c)	149	247	420	8.2	9.8	11.7	14.1	16.2
Total	1,824	2,517	3,588	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: The 1970 and 1980 figures are from Census data. The 2000 estimates were prepared by Recht Hausrath & Associates as described in the text of this appendix. These estimates are only approximate, order-of-magnitude figures.

(a) Includes Alameda, Contra Costa, Solano, and Napa counties.
(b) Includes San Mateo and Santa Clara counties.
(c) Includes Marin and Sonoma counties.

SOURCE: Recht Hausrath & Associates

ABAG projections./4/ These forecasts are relatively consistent since the labor force includes both employed and unemployed persons.

Separate from housing and labor force growth, the ABAG employment forecasts were reviewed in the light of recent county employment data (from the State of California Employment Development Department and the Department of Commerce, County Business Patterns) to describe recent trends and the likely future distribution of employment throughout the region.

San Francisco Context

Housing and population trends were analyzed for San Francisco. A summary of the changes which have occurred over the past 20 years is presented in the text in the housing impact section (see Tables V.D.1 and V.D.2). Future scenarios of housing development, population changes, and changes in employed residents were developed as input into the forecasts of residence patterns. The scenarios of future employed residents of San Francisco are the primary inputs into the forecasting process.

The number of employed residents in the City in the future depends on the addition of population and households, and on the extent to which the existing and future population includes employed persons. Both of these factors are expected to experience some change over time.

The number of households in the City will depend largely on the addition of housing units. The number of households equals the number of occupied housing units, so the terms are used interchangeably. Several different scenarios for housing development in San Francisco are possible. Many regional and national factors beyond local control will affect the outcome. Recognizing the uncertainties involved, a "most likely" scenario and possible alternative scenarios were developed for the purposes of this study. Generally, it is expected that the average net addition of housing units in San Francisco could range from 600 to 1,500 units per year. The following information is relevant to these estimates:

- From 1970-1980: about 1,600 new units were built per year; the net addition of housing units after accounting for demolitions and conversions was 620 units per year; and the net addition of households was 370 per year after accounting for vacancies and for units not available for year-round use.

- From 1980-2000: ABAG forecasts the addition of 1,500 units per year in its Projections 1979 report and assumes 600 units per year in its "Strategic Plan" report. The goal stated in the City's proposed Housing Element is for the addition of 2,000 units per year in the 1980-1985 period.

For purposes of estimating future employed residents, assumptions were made about the net addition of households in San Francisco in the future. It was assumed that most of the growth of households would come from the development of new housing units. It could also occur because of changes in the vacancy rate of existing units, because existing larger houses are divided into several smaller housing units, as well as through the creation of in-law units as a part of existing housing. It was assumed that the combined result of all these types of changes could produce from 600 to 1,500 additional households each year in San Francisco, over the next 20 years.

Table I.3 identifies the number of households in San Francisco in future years based on these assumptions. As shown, the increase in the number of households would range from 12,000 to 30,000 households over the 20-year period. This would be a relatively small increase of from four to ten percent over 20 years. Although these scenarios are higher than the net increase in households experienced during the 1970's, it was reasoned that the current and future housing market will support the addition of from 600 to 1,500 housing units per year, while public policy in combination with housing market pressures will limit the demolition and conversion of existing units to support a higher net addition of units.

It is also expected that the average number of employed persons per household will increase over the next 20 years. In 1980, Census data indicate an average of 1.145 employed persons per household in San Francisco. This represents an increase of six percent from the

TABLE I.3: SCENARIOS FOR GROWTH OF HOUSEHOLDS AND EMPLOYED RESIDENTS IN SAN FRANCISCO

	1981	1984	1990	2000	Growth 1980-2000
Households (or occupied housing units)					
1980 = 298,956					
Future, if assume:					
Case A: 600 added per year	299,556	301,356	304,956	310,956	12,000
Case B: 1,000 added per year	299,956	302,956	308,956	318,956	20,000
Case C: 1,500 added per year	300,456	304,956	313,956	328,956	30,000
Employed Residents					
1980 = 342,458 (1.145 employed persons per household)					
Future, if assume: 1.145 employed persons per household increases to 1.202 by 1990 and 1.247 by 2000					
Case A	344,897	350,803	366,557	387,762	45,278
Case B	345,358	352,666	371,365	397,738	55,254
Case C	345,933	354,994	377,375	410,208	67,724

NOTE: The 1980 data are from Census data. The scenarios for 1981 and future years were developed by Recht Hausrath & Associates as described in the text of this appendix. The scenarios are approximate estimates. The figures are not rounded so the reader can duplicate the calculations described in the text as an aid to understanding the basis for the estimates.

SOURCE: Recht Hausrath & Associates

average of 1.08 employed persons per household in 1970. As explained in the text, the number of employed persons per household has been increasing, while the total persons per household has declined, primarily because of fewer children per household.

Because most of the baby boom generation has already entered the labor force and because of the increasing numbers of people over 65 years of age, generally less increase in labor force participation is expected in the future. For some groups, however, labor force participation will continue to increase, as existing residents of the City who did not previously work become employed and as people move in and out of the City and the new residents include more employed persons than did the residents they replaced. It is expected that the labor force participation of women in San Francisco will continue to increase and that the strong attraction of the City as a place to live for adult working-age households will continue.

The critical ratio used in these forecasts is employed persons per household. This ratio could also be affected by pressures to increase household size and increase the number of workers per household to enhance the ability of households to pay for housing. The relatively high costs of housing are likely to encourage larger household sizes in the future. The development of new housing could also affect this trend depending on the size and types of units produced. For example, the more very small units produced, such as studios or in-law units, a greater number of smaller households with fewer than average workers per household would be expected.

A "most likely" scenario was developed after consideration of all these factors. It assumes that the 1980 ratio of 1.145 employed persons per household increases by five percent to 1.202 by 1990 (about 80 percent of increase experienced 1970-1980) and by an additional 3.75 percent to 1.247 workers per household in 2000 (about 75 percent of increase 1980-1990). If these ratios are applied to the number of future households in San Francisco, the estimates of future employed residents

are those shown in Table I.3. These scenarios reflect an increase in employed residents over the next 20 years of from 45,000 to 68,000 persons, increases of 13 to 20 percent, respectively.

Other estimates of future employed residents of San Francisco were derived by assuming alternate scenarios for the increase in the average number of employed persons per household. These ranged from a high scenario assuming six percent increase in the ratio over each of the next ten-year periods and a low scenario assuming two percent growth in each period. For sensitivity analysis, these estimates would reflect a range around each of the estimates shown in Table I.3. For example, for Case B the increase in employed persons of 55,250 would range from 37,400 to 68,000 if these alternate assumptions were used.

One additional aspect of the future context for employed residents in San Francisco was evaluated: the effects of the C-3 District Alternatives on the number of employed residents in San Francisco. As explained in the impact section, C-3 District housing policy could result in the addition of housing units in San Francisco that would not have been built otherwise. If so, there would be a larger number of households in San Francisco as well and a larger number of employed residents. To develop estimates of employed residents for each Alternative, the scenarios described above were modified to account for the addition of more households. Table I.4 shows how the addition of various numbers of households would affect one of the scenarios of employed residents in San Francisco in 2000 (Case B from Table I.3). The differences are shown for the 1990 to 2000 period since this is the time when the C-3 District policies would have an effect.

For purposes of preparing the forecasts of future residence patterns, the Case B scenario of adding an average of 1,000 households per year (10,000 households from 1990-2000) was assumed to be the "most likely" case. The other cases were used to test the sensitivity of the conclusions. Since the C-3 District Alternatives affect the amount of housing built in the City, the "most likely" scenario was used for Alternative 1 and modified to reflect more housing development under

TABLE I.4: SCENARIOS ILLUSTRATING EFFECT OF C-3 DISTRICT HOUSING POLICY ON EMPLOYED RESIDENTS IN SAN FRANCISCO

Assumption: Without Change in C-3 District Housing Policy, Use Scenario Assuming 1000 Households Added per year. This is Case B in Table I.3.

	Households		Employed Residents	
	2000	Change 1990-2000	2000	Change 1990-2000
Case B	318,956	10,000	397,738	26,373
Additional Households 1990-2000 Because of C-3 District Housing Policy Changes				
+ 500	319,456	10,500	398,362	26,997
+1,000	319,956	11,000	389,985	27,620
+1,500	320,456	11,500	399,609	28,244
+2,000	320,956	12,000	400,232	28,867
+3,000	321,956	13,000	401,479	30,114
+4,000	322,956	14,000	402,726	31,361

NOTE: The assumptions regarding future changes in employed persons per household are the same for all scenarios shown in this table.

SOURCE: Recht Hausrath & Associates

the other Alternatives./5/ The assumptions for the increase in households from 1990 to 2000 for the other Alternatives were the following: Alternative 2, 11,000; Alternative 3, 10,500; Alternative 4, 14,000; and Alternative 5, 12,000. The reasoning for these choices is explained in the text discussion of the potential net addition of housing under the policies of each Alternative (see Table V.D.3).

Propensities

The fourth major type of information developed for forecasting residence patterns was information on the propensity of residents in each county to work in the C-3 District. Since residents throughout the region are not equally likely to work in San Francisco, consideration had to be given to the relative attractiveness of housing locations for C-3 District workers and to potential future changes in the relative attractiveness of each place. Estimates were developed of the percentage of employed workers in each county who currently work in San Francisco and in the C-3 District. Table I.5 provides examples of how the "propensity to work in the C-3 District" currently varies for selected Bay Area counties. Other information about the commute patterns of workers in each county and about employment throughout the region was also developed.

Table I.5 indicates that the propensity to work in the C-3 District is highest for San Francisco residents, followed by residents of Marin County, San Mateo and Contra Costa counties, and then Alameda County./6/ The propensity is indicated by the percentage of employed persons residing in each county who work in the C-3 District (far right column) and by comparison of that percentage to the other figures in the table./7/ For example, about 45 percent of employed San Francisco residents work in the C-3 District. This is the highest percentage among Bay Area counties. This percentage is much higher than the share of the region's total workforce represented by employed City residents (14 percent). Thus, San Francisco residents represent a much higher share of all those who work in the C-3 District (they hold

TABLE I.5: EXAMPLES OF THE RELATIVE ATTRACTION OF C-3 DISTRICT JOBS TO RESIDENTS OF SELECTED BAY AREA COUNTIES

County	Total Number of Employed Persons, 1980 (000)	Percent of Total Employed Persons In The Region %	Number Employed In C-3 District, 1981 (000)	Percent of C-3 District Jobs %	Percent of Total Employed Residents In Each County %
San Francisco	342	14%	147	57%	45%
Alameda	515	20%	33	13%	6%
Contra Costa	305	12%	28	11%	9%
San Mateo	314	12%	29	11%	9%
Marin	117	5%	15	6%	13%

NOTE: Data on employed residents of each county is from the 1980 Census data file STF-3 as tabulated by the California State Census Data Center. The information on those employed in the C-3 District is that developed in this study (see Table IV.D.1). There is a slight inconsistency in the data in that the C-3 District data is for 1981 and the countywide data is for 1980. This does not have a major effect on the overall pattern illustrated by the figures. It probably means that the percentages in the far right hand column are slightly high.

SOURCE: Recht Hausrath & Associates

57 percent of C-3 District jobs) than they do of the total regional workforce (14 percent). A similar situation exists for Marin County although to a much lesser degree (13 percent of Marin's employed residents work in the C-3 District and they represent six percent of C-3 District workers, while all employed persons living in Marin represent five percent of the region's workforce).

Although Alameda County houses the second largest number of C-3 District workers, it has the lowest propensity to house C-3 District workers among the five counties shown in Table I.5 (six percent of the county's workers are employed in the C-3 District although, in total, the county houses 20 percent of the region's workforce). This probably reflects the large amount of employment within Alameda County itself as well as the fact that some portions of the county are quite distant from San Francisco.

Changes over time in these propensities had to be considered qualitatively based on a variety of information sources. Generally, the process was to develop a line of reasoning about how residence patterns have been changing (since trend data is limited) and to relate the changes to two types of factors. One is the extent to which the general distribution of housing and workers throughout the region has been changing. The other is the extent to which the commute patterns of residents in different areas have been changing. For example, during the 1970's population grew substantially in Contra Costa County, and the percentage of the region's population and housing located in the county increased. It also appears that the propensity of Contra Costa County residents to commute to jobs in San Francisco was also enhanced so that a larger percentage of the county's employed residents now work in San Francisco than was true ten years ago. There are many reasons for these changes related to all of the factors listed in Figure I.1.

A similar reasoning process was used to consider future changes in the propensities to work in the C-3 District. This was done qualitatively based on review of future employment, population, housing, and transportation factors, as well as past trends. The Downtown EIR Employee Survey was also useful since it included questions about the relative importance of various factors in the household's decision to choose a housing location or in a worker's decision to choose a job. Analysis of this data helped to identify the nature of the trade-offs which workers and households continually make as they are faced with changing employment and housing options.

Forecasts of Future Residence Patterns

Background Analyses

The forecasts of future residence patterns of C-3 District workers were developed based on consideration of all of the factors described above and identified in Figure I.1. In addition to the analyses done to identify trends and prepare future scenarios for the regional context, the San Francisco context, and propensities to live in each county and work in the C-3 District, other analyses were done to specifically investigate the residence patterns of C-3 District workers. Since consistent data for the C-3 District are not available for different time periods, changes in residence patterns cannot be easily identified and documented. Instead, various analyses were done to provide insights into probable trends. These analyses included:

- Documentation of changing residence patterns for San Francisco overall as shown by Census data for 1960, 1970, and 1980. This analysis is summarized in the text of the impact section (see Tables V.D.1 and V.D.2). Changes are considered from the perspectives of the places of work for City residents and of the places of residence for all people holding San Francisco jobs.

- Comparison of the residence patterns identified for downtown workers of various types in surveys that have been conducted for other studies and project EIRs. Although these surveys are not directly comparable, they provide some insights.

- Review of data supplied by a major C-3 District employer which described the places of residence of employees, currently, four years ago, and four years previous to that.

- Analysis of the Downtown EIR Employee Survey results to identify residence patterns for C-3 District workers according to when they became employed in the C-3 District, when they last changed their residence, and when they moved into the Bay Area. In the analysis of each of these groups, efforts were made to control for important demographic and housing characteristics to see if those who were newly employed or who moved recently appeared to have housing characteristics which differed from those whom they replaced or from all others in the downtown.

Process of Developing Forecasts

Having completed all of the background analyses and forecasts, future residence patterns were developed in several steps. The forecasts were prepared for workers in the various business activities and then combined to evaluate the reasonableness of the overall pattern.

First, decisions were made as to the number and percentage of C-3 District workers likely to reside in San Francisco and the number to reside outside of San Francisco. Second, those workers forecast to live elsewhere in the region were distributed to commute corridors (east bay, south bay, north bay) and then to counties. Third, the San Francisco residents were distributed among the four City Study Areas (southeast, southwest, northwest, northeast). Fourth, consideration was given to the distribution of C-3 workers among the eastern and western portions of San Mateo, Alameda, and Contra Costa counties as needed for the transportation analysis.

The most detailed analysis and the most accurate forecasts are those developed to identify the residence patterns of C-3 District workers according to whether they would reside in San Francisco or live elsewhere in the region. The next level of detail and accuracy applies to the distribution of workers living outside of the City among commute corridors. In order of reliability after that are the forecasts by county, by San Francisco Study Areas, and lastly by portions of certain counties.

The general approach in developing the forecasts for San Francisco, the commute corridors, and the Bay Area counties was to evaluate the number of workers forecast to reside in each place from two perspectives. The first was to consider the percentage distribution of C-3 District workers among places of residence in light of the analyses of how this distribution appears to be changing. The second perspective was to consider the percentage of employed residents of each county that would be represented by those working in the C-3 District. The analyses and forecasts of the future regional context,

San Francisco context, and propensities to live in each county and work in the C-3 District provided the basis for this evaluation.

Scenarios For C-3 District Workers Living In San Francisco

In the process of forecasting residence patterns, several different scenarios were prepared for the C-3 District workers living in San Francisco. The results provide a sensitivity analysis of the implications of alternate assumptions and approaches. The scenarios are summarized in Table I.6.

The top two lines of the table identify the total number of employed residents of San Francisco and the number of C-3 District jobs. These items are common to all the scenarios. (For reference, the number of employed residents are those shown in Tables I.3 and I.4).

The next three lines present the "most likely" scenario. This is the one presented in the impact section of the text (see Table V.D.4).

Three other scenarios were prepared. They are referred to as the low, mid, and high scenarios in the table. The assumptions behind each scenario are the following:

- High scenario: assumes that the 1981 percentages of C-3 District workers living in San Francisco remain constant in the future for each business activity. The overall percentage of C-3 District jobs held by City residents shown in Table I.6 declines over time by a small amount due only to differences in the mix of jobs, not because of any changes in the 1981 ratios.

- Mid scenario: assumes that the 1981 percentage of employed San Francisco residents represented by those working in the C-3 District (44.5 percent) remains constant in the future.

- Low scenario: assumes that the increase in C-3 District workers who live in San Francisco represents 30 percent of the growth over time in total employed residents in the City. This pattern may be similar to the trends from 1970 to 1980.

TABLE I.6: SCENARIOS FOR C-3 DISTRICT EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE

				2000 By Alternative				
	1981	1984	1990	1	2	3	4	5
Employed Residents of San Francisco	345,360	352,670	371,370	397,740	398,990	398,360	402,730	400,230
C-3 District Jobs	270,370	286,130	327,900	392,580	389,330	384,660	371,890	373,020
"Most Likely" Scenario								
C-3 District Workers Living in San Francisco	153,670	158,730	173,220	193,110	192,090	190,550	190,160	189,320
Percent of C-3 District Jobs	56.8%	55.5%	52.8%	49.2%	49.3%	49.5%	51.1%	50.8%
Percent of Employed San Francisco Residents	44.5%	45.0%	46.6%	48.6%	48.1%	47.8%	47.2%	47.3%
Range of Estimates from Other Scenarios								
C-3 District Workers Living in San Francisco	Low -	155,870	161,480	169,390	169,760	169,580	170,890	170,140
	Mid -	156,940	165,260	176,990	177,550	177,270	179,210	178,100
	High -	161,870	184,110	217,870	215,960	213,340	206,710	207,340
Percent of C-3 District Jobs	Low -	54.5%	49.2%	43.1%	43.6%	44.1%	46.0%	45.6%
	Mid -	54.8%	50.4%	45.1%	45.6%	46.1%	48.2%	47.7%
	(A)High -	56.6%	56.1%	55.5%	55.5%	55.5%	55.6%	55.6%
Percent of Employed San Francisco Residents	Low -	44.2%	43.5%	42.6%	42.5%	42.6%	42.4%	42.5%
	(B) Mid -	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%
	High -	45.9%	49.6%	54.8%	54.1%	53.6%	51.3%	51.8%

TABLE I.6: SCENARIOS FOR C-3 DISTRICT EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE (Continued)

Comparisons For Evaluating Estimates		1981-1990 %	1990-2000 By Alternative 1 %	2 %	3 %	4 %	5 %
Net Increase in San Francisco Residents Working in C-3 District as Percent of Net Increase of C-3 District Jobs (a)	Most Likely	34.0	30.7	30.7	30.5	38.5	35.7
	Low	13.6	12.2	13.5	14.3	21.4	19.2
	Mid	20.1	18.1	20.0	21.2	31.7	28.5
	High	52.9	52.2	51.8	51.5	51.4	51.5
Net Increase in San Francisco Residents Working in C-3 District as Percent of Net Increase of Total Employed City Residents (b)	Most Likely	75.2	75.4	68.3	64.2	54.0	55.8
(C)	Low	30.0	30.0	30.0	30.0	30.0	30.0
	Mid	44.5	44.5	44.5	44.5	44.5	44.5
	High	117.1	128.0	115.3	108.2	72.1	80.4

NOTE: The assumptions used for the other scenarios are described in the appendix text. The table entries labelled (A), (B) and (C) indicate where those assumptions enter into the calculation of the scenarios.

(a) For each time period and Alternative, this percentage expresses the ratio: change in San Francisco residents working in the C-3 District/change in C-3 District employment.

(b) For each time period and Alternative, this percentage expresses the ratio: change in San Francisco residents working in the C-3 District/change in employed City residents.

SOURCE: Recht Hausrath & Associates

The second page of the table provides ratios of the increase in San Francisco residents working in the C-3 District to the increase in C-3 District jobs and to the increase in total employed City residents. Comparison of these ratios helps in evaluating the reasonableness of each scenario.

The assumption to hold the percentage of jobs held by City residents constant results in the high scenario because C-3 District jobs are forecast to increase by a larger amount than employed San Francisco residents. Thus, the percentage of total employed residents who would work in the C-3 District would increase over time. The main reason why this scenario was not chosen as the most likely is that the resulting percentage of employed residents who would be working in the C-3 District in 2000 was judged to be too high (51.3-54.8 percent). The ratios on the second page of the table indicate that the increase in City residents working in the C-3 District would be larger than the net increase in total employed City residents in most cases. This is possible if there is a large amount of turnover of the housing stock and/or if many San Francisco residents change their place of work. This was judged to be unlikely given the employment growth that is likely in places outside the C-3 District that would also compete for the City's labor force.

The low scenario reflects a decline in both the percentage of C-3 District jobs held by residents and the percentage of City residents who work in the C-3 District. While the average percentages appear reasonable, the marginal percentages on the second page of the table are less reasonable. They indicate that the increase in City residents working in the C-3 District would represent a relatively small share of the growth of C-3 District jobs (12.2 percent - 21.4 percent). While this is a possible scenario, it was judged to be on the low side because the growth of C-3 District employment of various types is likely to draw on more of the City's labor force.

The mid scenario is relatively similar to the low scenario. The main difference between the low and mid scenarios is that the mid scenario

results in a larger share of future C-3 District jobs held by residents and a larger share of City residents employed in the C-3 District. It is the most similar to the "most likely" forecast.

The "most likely" scenario used for the forecast was developed by evaluating the scenarios shown here in light of all the analyses described earlier. The forecast numbers are judgemental estimates based on all of these considerations. Of particular importance was the analysis of residence patterns of current C-3 District workers according to when they had moved. The survey data showed that the percentage of C-3 District employees living in San Francisco declined the more recently the employees had moved, holding other variables, such as tenure and household income, constant. In other words, those who had moved most recently were less likely to choose housing in San Francisco than those whose most recent move occurred earlier. The survey results also identified somewhat different patterns for workers employed in different business activities which was also useful in completing the forecasts.

More detailed tabulations of the most likely forecast are provided in the last section of this appendix, including the forecasts by business activity.

NOTES - Theoretical Discussion of Housing Market Effects/Methodology for Forecasting Residence Patterns

/1/ It is difficult to determine the effect of job availability on in-migration to the region. When questioned, recent in-migrants would probably list many factors besides employment as the reasons why they moved to the Bay Area. Thus, to some extent, growth of employment may be keeping up with population growth rather than attracting more labor. Yet, it may also be the case that in-migration drops off for a variety of reasons in times of economic problems (or out-migration increases), or in-migration may be much lower in places with depressed economies than in places with more job opportunities. The statements in this appendix recognize all the complexities and dynamics involved although they are somewhat simplified to explain the basic relationships.

/2/ ABAG is currently in the process of revising its housing forecasts for counties. Even if the revised figures differ somewhat from those shown here, they will not materially affect the forecasts of residence patterns prepared for this study. The overall trends, as shown by changes in the percentage distributions in Table I.1, are unlikely to be substantially different. Further, within the context of the entire region, the residence patterns of C-3 District workers are only approximate estimates and represent a fairly small share of the residents in many Bay Area counties.

/3/ The east bay and the south bay also experienced the most growth in employed residents during the 1970's. However, during that period, the south bay grew by a larger amount than the east bay. Compared to the 1970's, the estimates for the 1980's and 1990's indicate that the growth of employed residents in the south bay will represent a smaller share of the total growth for the region and that the growth in the east bay, north bay, and in San Francisco will represent a larger share.

/4/ See page 6, "Long Term Forecasts for the San Francisco Bay Area," Association of Bay Area Governments, February 1982.

/5/ The estimates of employed persons per household for the additional housing units built under Alternatives 2, 3, 4, and 5 were developed using the same overall citywide ratios of employed persons per household that were used for Alternative 1 (ratios shown in Table I.3). It is possible that the additional housing units could have higher than average employed persons per household if they were located nearer the downtown or because they are more likely to be purchased by households with workers while the overall citywide average assumes some households without workers. An alternate estimate of employed residents in 2000 was prepared assuming that the additional housing units were occupied at 1.8 workers per household instead of at the overall average of 1.247 workers. The results indicate a slightly larger number of workers in 2000 under this alternate assumption. It would make the least difference for Alternative 3 (adding only 276 workers) and the most difference for Alternative 4 (adding about 2,200 workers). This alternate scenario was not chosen as the most likely. The main reason was that the additional units may be smaller than average with lower average workers per household even if they were all occupied by workers. This is likely to be the situation for Alternative 4 which would add the largest number of units.

If the number of employed residents was underestimated, this factor would not significantly affect the residence patterns estimated for the Alternatives. Either the number of C-3 District workers who live in San Francisco would be slightly underestimated, or the percentage that they represent of all employed San Francisco residents would be slightly overestimated. The latter is probably the more likely.

/6/ The propensities for the other four counties are lower than those for the five counties discussed here.

/7/ Estimates were also developed of the propensities to live in each county and work in San Francisco, outside the C-3 District. Generally, it was found that a larger share of San Mateo and Marin County residents work elsewhere in San Francisco than in the C-3 District. The percentages are relatively similar for San Francisco residents. For Alameda and Contra Costa counties, lower share of employed residents work elsewhere in the City and larger shares are employed in the C-3 District. Thus, in terms of total propensity to live in a particular county and work in San Francisco, it is highest for San Francisco, followed by Marin County, then San Mateo County, then Contra Costa County, and last, Alameda County.

SUPPLEMENTAL TABLES AND MAPS FOR RESIDENCE PATTERNS AND HOUSING ANALYSIS

TABLE I.7: C-3 DISTRICT PRIMARY OFFICE EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE, 1990 AND 2000

				2000 By Alternative				
	1981	1984	1990	1	2	3	4	5
C-3 District Primary Office Jobs	172,550	185,870	216,220	261,540	259,530	257,010	247,120	248,470
C-3 District Primary Office Workers Living in San Francisco	84,310	89,030	99,200	112,720	112,110	111,360	110,020	110,200
Percent of Total C-3 District Primary Office Workers	48.9%	47.9%	45.9%	43.1%	43.2%	43.3%	44.5%	44.4%
City Residents Holding Primary Office Jobs in C-3 District as Percent of All Employed San Francisco Residents	24.4%	25.2%	26.7%	28.3%	28.1%	27.9%	27.3%	27.5%

		1990- 2000 By Alternative				
	1981-1990	1	2	3	4	5
Net Increase In Primary Office Workers Living in San Francisco as Percent of Growth of C-3 District Primary Office Jobs	34.1%	29.8%	29.8%	29.8%	35.0%	34.1%

SOURCE: Recht Hausrath & Associates

TABLE I.8: C-3 DISTRICT OFFICE EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE, 1990 AND 2000

C-3 DISTRICT OFFICE EMPLOYEES LIVING IN SAN FRANCISCO, BY ALTERNATIVE, 1990 AND 2000

				2000 By Alternative				
	1981	1984	1990	1	2	3	4	5
C-3 District Office Jobs (Primary and Secondary Office)	207,320	223,220	259,400	315,860	313,130	309,940	297,940	300,060
C-3 District Office Workers Living in San Francisco	106,880	112,150	123,300	139,940	139,120	138,180	136,400	136,650
Percent of C-3 District Office Jobs	51.6%	50.2%	47.5%	44.3%	44.4%	44.6%	45.8%	45.5%
City Residents Holding Office Jobs in C-3 District as Percent of All Employed San Francisco Residents	30.9%	31.8%	33.2%	35.2%	34.9%	34.7%	33.8%	34.1%

		1990-2000 By Alternative				
	1981-1990	1	2	3	4	5
Net Increase in Office Workers Living in San Francisco as Percent of Growth of C-3 District Office Jobs	31.5%	29.5%	29.5%	29.5%	34.0%	32.8%

SOURCE: Recht Hausrath & Associates

TABLE I.9: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 1984 AND 1990

		Workers By Business Activity				
1984	Total C-3 District %	Primary Office %	Secondary Office %	Retail %	Hotel %	Cultural/Institutional Educational %
San Francisco	55.5	47.9	61.9	77.2	82.4	71.2
East Bay	25.6	32.5	12.0	10.9	9.6	18.2
South Bay	12.1	11.0	20.8	9.5	6.5	8.8
North Bay	6.8	8.5	5.3	2.4	1.5	1.8
Other	small	0.1	small	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1990						
San Francisco	52.8	45.9	55.8	77.2	82.4	68.2
East Bay	27.5	33.9	16.4	10.8	9.6	20.5
South Bay	12.4	11.2	22.0	9.5	6.4	9.4
North Bay	7.3	8.9	5.8	2.5	1.6	1.9
Other	small	0.1	small	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: Residence patterns are not included here for industrial/warehouse/automotive/parking workers, building maintenance/security workers, and construction workers.

SOURCE: Recht Hausrath & Associates

TABLE I.10: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 2000

		Workers By Business Activity				
Alternative 1	Total C-3 District %	Primary Office %	Secondary Office %	Retail %	Hotel %	Cultural/Institutional Educational %
San Francisco	49.2	43.1	50.1	73.3	78.3	65.5
East Bay	29.9	35.8	20.2	12.7	11.8	22.3
South Bay	12.9	11.5	23.0	10.6	7.8	9.9
North Bay	8.0	9.5	6.6	3.4	2.1	2.3
Other	small	0.1	0.1	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Alternative 2						
San Francisco	49.3	43.2	50.4	73.4	78.3	66.2
East Bay	29.8	35.7	20.1	12.7	11.8	21.9
South Bay	12.9	11.5	22.9	10.5	7.8	9.7
North Bay	8.0	9.5	6.5	3.4	2.1	2.2
Other	small	0.1	0.1	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE I.10: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 2000 (Continued)

		Workers By Business Activity				
Alternative 3	Total C-3 District %	Primary Office %	Secondary Office %	Retail %	Hotel %	Cultural/Institutional Educational %
San Francisco	49.5	43.3	50.7	73.8	78.3	66.2
East Bay	29.7	35.6	20.0	12.4	11.8	21.9
South Bay	12.8	11.5	22.8	10.4	7.8	9.7
North Bay	8.0	9.5	6.5	3.4	2.1	2.2
Other	small	0.1	small	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Alternative 4						
San Francisco	51.1	44.5	51.9	76.2	81.0	68.7
East Bay	28.7	34.9	19.5	11.3	10.3	20.3
South Bay	12.5	11.2	22.2	9.5	6.8	9.0
North Bay	7.7	9.3	6.4	3.0	1.9	2.0
Other	small	0.1	small	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE I.10: EMPLOYEE RESIDENCE PATTERNS FOR THE C-3 DISTRICT, BY BUSINESS ACTIVITY, 2000 (Continued)

Alternative 5	Total C-3 District %	Workers By Business Activity: Primary Office %	Secondary Office %	Retail %	Hotel %	Cultural/Institutional Educational %
San Francisco	50.8	44.4	51.3	76.0	80.5	68.3
East Bay	29.0	35.0	19.8	11.5	10.6	20.5
South Bay	12.5	11.2	22.5	9.5	7.0	9.1
North Bay	7.7	9.3	6.4	3.0	1.9	2.1
Other	small	0.1	small	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: Residence patterns are not included here for industrial/warehouse/automotive/parking workers, building maintenance/security workers, and construction workers.

SOURCE: Recht Hausrath & Associates

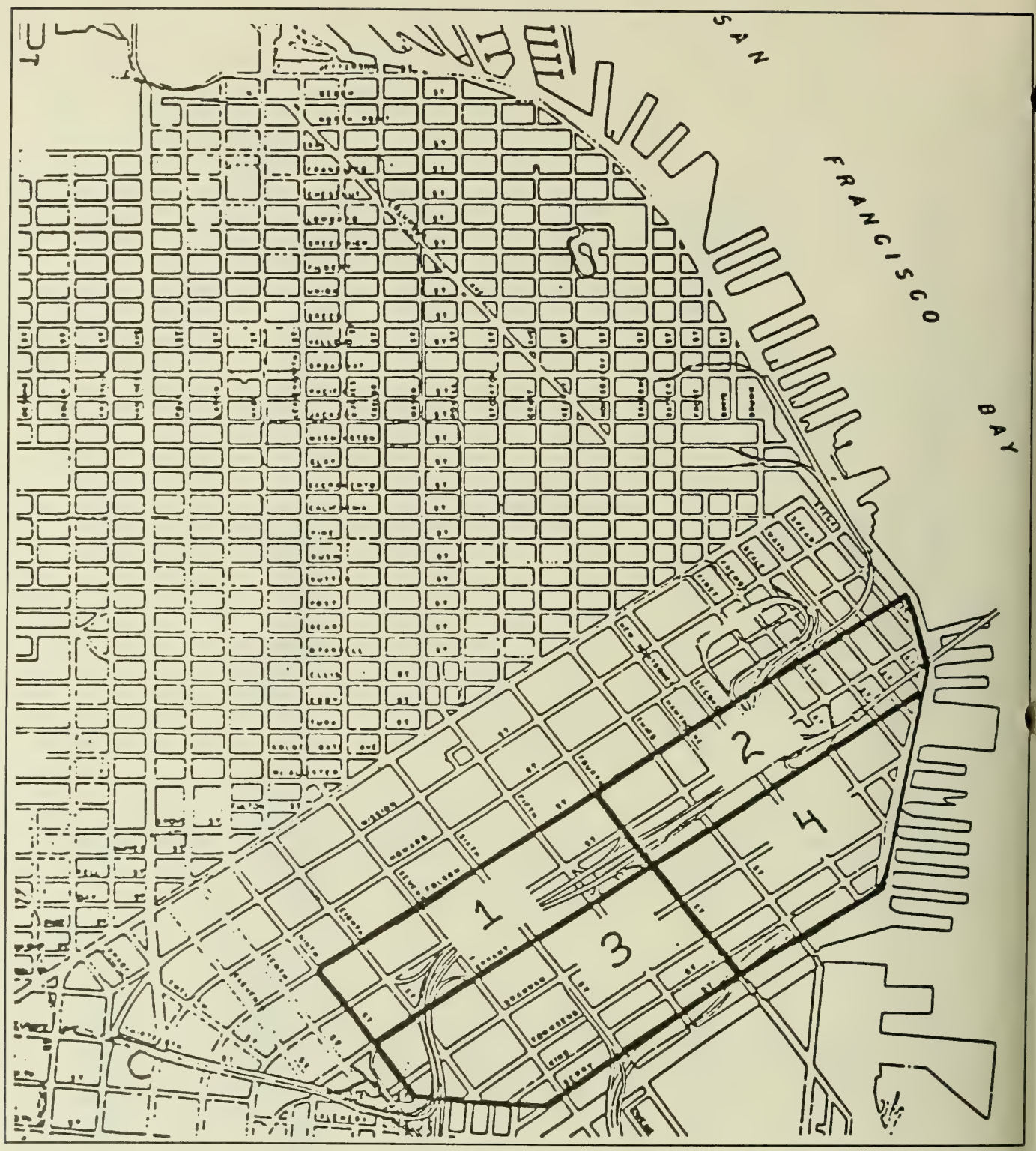


FIGURE I.2:
SOUTH OF MARKET / FOLSOM SURVEY AREA AND SUBAREAS

SOURCE: Recht Hausrath & Associates

APPENDIX J: TRIP GENERATION, MODAL SPLIT AND PEDESTRIAN CIRCULATION

INTRODUCTION

Analysis of transportation impacts in this report required projections (forecasts) of travel patterns for three different years (1984, 1990, and 2000) and five alternatives. Prior to making the projections, an analysis of existing conditions was undertaken to establish the travel patterns of C-3 District users (both employees and visitors) and to establish travel patterns on roadways and transit systems serving the C-3 District, downtown San Francisco, and San Francisco as a whole. Existing travel patterns on the transportation network were determined by obtaining traffic volume counts, transit ridership counts and pedestrian volume counts. The counts were a combination of data collected previously by others (City Departments and other consultants) and new data collected as part of this study. Capacities for each of the transportation modes were determined from field measurements, analysis of count data and schedule calculations. The operating conditions for each transportation mode were determined and used to chronicle overall conditions in the transportation network serving San Francisco and the C-3 District.

Surveys of C-3 District employers, employees and visitors were used to document the travel patterns of C-3 District users. Appendix F describes the employer/employee survey and the method of sampling used to administer the survey. Analysis of the survey results yielded travel patterns for C-3 District employees. Similar travel patterns for visitors were calculated from a survey of visitor travel at specific locations in the C-3 District./1/

The travel patterns of C-3 District users were compared to the overall travel patterns on the transportation network to determine the magnitude of non-C-3 District travel taking place on the transportation network.

Projections of travel demand and system capacities were developed for 1984 and 1990 and for the five Alternatives in the year 2000. Forecasts of future travel were made using a travel demand analysis. The analysis included three components: trip generation, trip distribution and trip assignment. Future modal splits (distribution/assignment of travel to specific transportation modes) were developed as part of the travel demand process and used to make trip assignments.

TRAVEL DEMAND ANALYSIS

Trip Generation

Travel forecasts are made on the basis of predictors or indicators of travel such as land use, employment, and building area or acreage. For example, data from published trip generation studies indicate that an office building may generate 15 one-way vehicle trips per day per 1,000 square feet of space./2/ Similar data also indicate five one-way person trips per day per office employee. These two trip generation rates would be equivalent if the number of employees per 1,000 square feet (three), vehicle occupancy (one person per vehicle), and mode choice (all trips to the buildings are made in autos) were constant for both studies . If, however, the factors vary, then the two rates would not be equivalent. For the purposes of this report, trip generation rates expressed in units of person trip-ends (pte) per employee were used to forecast travel.

Trip generation data-collection studies have traditionally been conducted at suburban locations, primarily because the method of data collection (often limited by economic necessity) involves the use of mechanical vehicle counters at driveways (access points) or on roadways. The mechanical counts are sometimes augmented with manual counts for information on vehicle occupancy (persons per vehicle) and number of trucks. Sites are selected where the driveway or roadway serves one primary land use, and the automobile is the primary mode of travel to the site. In most suburban locations, travel to the surveyed sites usually consists of automobile and truck traffic only, with no travel or minimal travel by other transportation modes due to limited transit service and inconvenient walking distances. Given the conditions in which the trip generation data-collection surveys are made, vehicle traffic and vehicle occupancy can give an accurate indication of the total number of person trip-ends to specific land uses. The total travel to a site is divided by the total number of employees on-site to give a trip generation rate that is expressed on a per employee basis.

The total number of trips per employee as collected in the trip generation surveys includes all trips to and from a survey site, and is not limited to employee work-trips only. Total trips include employee work (commute) trips and other trips by employees, as well as other trips by visitors, customers, clients, service and maintenance personnel, and others.

The process used to administer the employee survey (see Appendix F) estimated the employment in the C-3 District in 1982 by occupation (see Section IV.C.); the occupations were grouped into business activity groups. The number of employees for each business activity in each Subarea was forecast for 1984, 1990, and 2000. The number of employees forecast in each business activity group was used as the basis for the trip generation process.

The businesses in the Downtown area were divided into eight categories of similar occupations. The categories were the following:

- Primary Office
- Secondary Office
- Retail Trade
- Hotels
- Cultural/Institutional/Educational
- Industrial/Warehouse/Automotive/Parking
- Building Maintenance/Security
- Construction

Primary Office includes government office uses and Secondary Office includes branch banks. Because of the difference in trip generation rates for government offices and branch banks when compared to Primary Office and Secondary Office, government office and branch banks were treated as separate trip generators (see Table J.1).

The trip generation rates for each business activity group are shown in Table J.1. The trip generation rates are based on data from a number of studies and reports. The published trip generation rates (usually expressed in vehicle trip-ends) have been converted as described above to give person trip-ends per employee./2/

The rates shown in the Table represent the total number of person trip-ends per employee on a daily basis and on a p.m. peak-hour basis. The peak hour is 4:30 to 5:30 p.m. This is the peak hour for travel on transportation systems serving the C-3 District as a whole and may not correspond to the peak travel hour of the business activity groups. These trip generation rates are expected to remain essentially constant on the basis of a person trip-end rate per employee. The mode split or method of travel for each person-trip is expected to change in the future. (See Modal Split and Trip Assignment, below.)

TABLE J.1: C-3 DISTRICT TRIP GENERATION RATES BY BUSINESS ACTIVITY GROUP (Person Trip Ends Per Employee)

Business Activity	24-Hour Total(a)	P.M. Peak Hour(b) Total(c)	Work	Non-Work
Primary Office (except Govern't)	5.00	0.60	0.50	0.10
Government Office	9.00	0.60	0.50	0.10
Secondary Office (except Banks)	5.00	0.40	0.30	0.10
Branch Banks	56.50	1.10	0.60	0.50
Retail Trade	23.80	1.00	0.50	0.50
Hotels	15.80	0.50	0.30	0.20
Cultural/Instit./ Educational	19.00	1.10	0.20	0.90
Industrial/Warehouse/ Auto/Park	4.20	0.70	0.30	0.40

(a) Person Trip-ends (PTE) shown are for typical weekday travel. Weekend travel rates vary by business activity. Weekend trip rates for office, banking and industrial uses are generally lower than weekday trip rates. Weekend trip rates for hotel, retail and cultural are generally equivalent to or higher than weekday trip rates.

(b) P.M. Peak hour is 4:30 - 5:30 p.m. on transportation systems serving the C-3 District. The peak hour of each business activity may not correspond to the peak hour of the transportation systems.

(c) Totals includes both work and non-work travel.

SOURCE: TJKM Transportation Consultants

Trip Distribution

Trip distribution is based on residence locations for work trips and other origin-destination data for non-work trips. Data from the employee survey were used to provide the 1982 residence locations for C-3 District employees by Subarea. The residence patterns for 1984 were developed as part of the housing analysis (see Section IV.D. for 1984 and

Section V.D for 1990 and 2000). The total 1984 residence locations and locations by Subarea for travel during the peak hour are shown in Table J.2. The total 1984 residence locations indicate the expected pattern of employee residence in 1984. The p.m. peak-hour columns in Table J.2. represent the residence locations expected in 1984 for C-3 District employees who would travel during the p.m. peak hour (4:30-5:30 p.m.). For example, about 26 percent of the C-3 District employees are expected to live in the East Bay in 1984. However, of the total employees in Subarea 1 expected to be commuting during the p.m. peak hour in 1984, about 31 percent would be traveling to the East Bay, while from Subarea 5, only about eight percent of the employees would be traveling to the East Bay.

The residence locations expected in 1990 are shown in Table J.3. Examinations of the "Total" columns for 1984 (Table J.2) and for 1990 (Table J.3) indicate that the percentage of C-3 District employees living in each of the four San Francisco transportation study areas would be expected to decrease slightly; whereas the percent of employees living in the Peninsula, East Bay and North Bay counties would be expected to increase slightly. The distributions for those employees traveling during the p.m. peak hour reflect a similar change. This does not mean that the number of C-3 District employees living in San Francisco would decrease. Rather, as C-3 District employment is projected to increase between 1984 and 1990, the declining percentages indicate the proportion of employees living in San Francisco would increase more slowly than the growth in employment.

The percentage of C-3 District employees living in San Francisco would be expected to decline, and the percentage living in the Peninsula, East Bay and North Bay would be expected to increase.

The residence locations expected in 2000 under the five Alternatives for C-3 District employees that would travel during the p.m. peak hour are shown in Tables J.4 and J.5. For the purpose of the transportation analysis, Alternatives 1, 2 and 3 have been assumed to have one residence pattern, while Alternatives 4 and 5, because of the residential provisions of these two Alternatives, have been assumed to have a separate residence pattern.

For non-work trips during the p.m. peak hour, the expected origins and destinations and modal split are based on a survey conducted in San Francisco./2/ The expected 1984 trip distribution and modal split (shown in Table J.6) for non-work travel during the p.m.

TABLE J.2: RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR BY SUBAREA, 1984 (percent)

Residence Area(a)	Subarea(b) 1	2	3	4	5	6	7
San Francisco							
Downtown/Northeast	7.4	1.8	9.0	4.6	16.8	0.8	12.2
Northwest	18.0	7.4	13.1	8.5	20.4	11.7	37.2
Southwest	13.5	15.4	39.6	11.9	24.5	28.3	38.5
Southeast	6.7	13.5	1.8	13.0	23.7	2.9	0.0
Peninsula/South Bay (San Mateo and Santa Clara Counties)	10.7	13.5	10.1	14.5	4.4	48.0	12.1
East Bay (Alameda, Contra Costa, Napa and Solano Counties)	31.2	39.9	21.3	39.7	8.2	8.0	0.0
North Bay (Marin and Sonoma Counties)	12.5	8.5	5.1	7.8	2.0	0.3	0.0

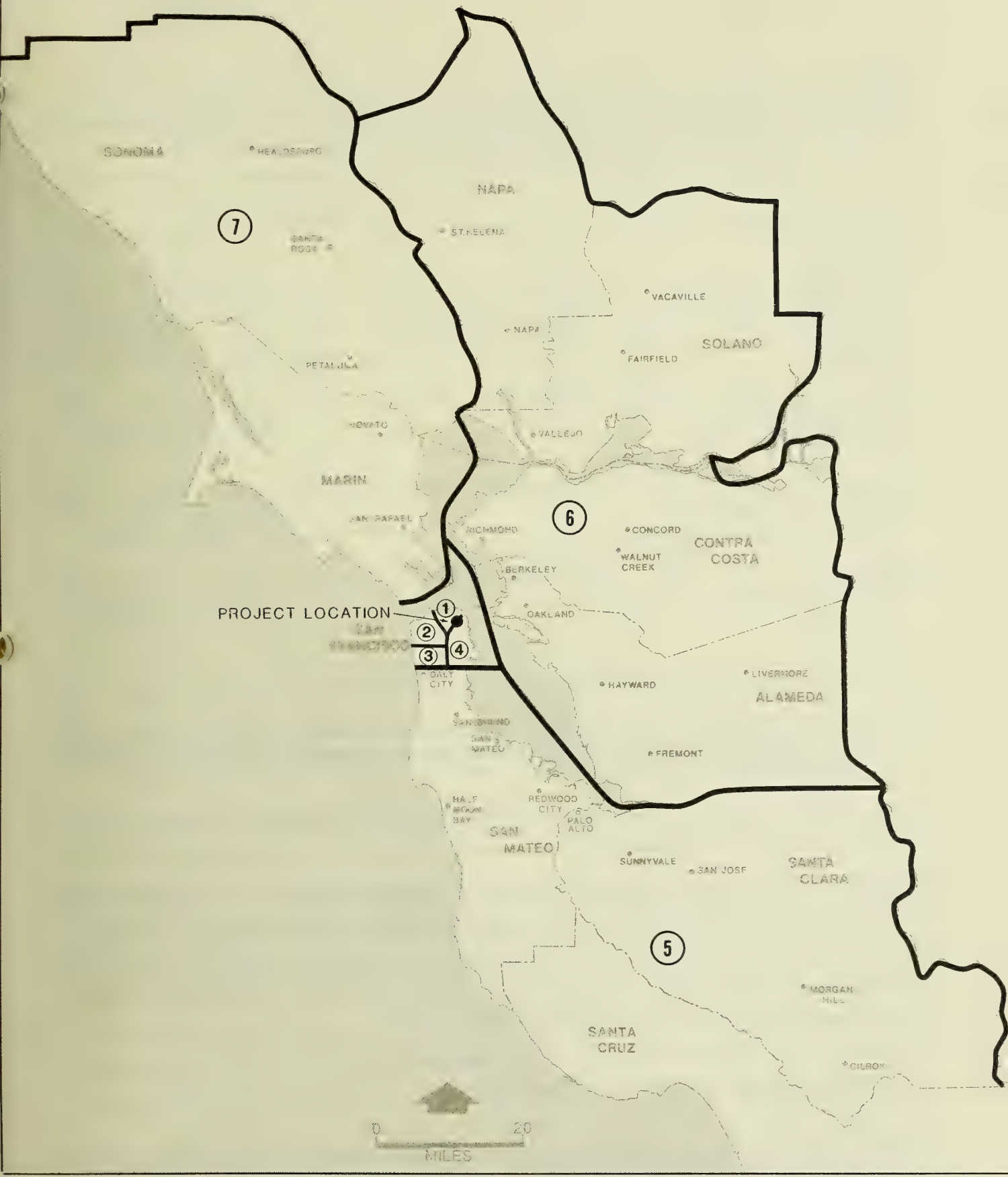
(a) Residence areas are shown in Figure J.1.

(b) Distribution of residence locations of employees in each Subarea for only those employees who would travel during the p.m. peak hour (4:30-5:30). Subarea boundaries are shown in Figure II.C.1.

SOURCE: Recht Hausrath & Associates and TJKM Transportation Consultants.

peak hour is expected to be locally-oriented with 84 percent of the origins and destinations in the Downtown/Northeast transportation study area. This predominance of local travel reflects the tendency of persons to avoid regional travel during the peak hour, if possible, for non-work trips. The modal split patterns shown in the table are described under Modal Split and Trip Assignment, below.

The 1990 non-work trip distribution (shown in Table J.7) would be similar to the 1984 distribution with more of an emphasis on the use of non-auto transportation modes. As the regional freeway and bridge system would approach capacity, non-work trips would be expected to shift to transit during peak hours.



1 NORTHEAST SAN FRANCISCO
2 NORTHWEST SAN FRANCISCO
3 SOUTHWEST SAN FRANCISCO
4 SOUTHEAST SAN FRANCISCO
5 PENINSULA/SOUTHBAY
6 EASTBAY
7 NORTHBAY

FIGURE J.1:
REGIONAL TRAVEL ASSIGNMENT AREAS

SOURCE: Environmental Science Associates, Inc.

TABLE J.3: RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR BY SUBAREA, 1990, (percent)

Residence Area(a)	Subarea 1	2	3	4	5	6	7
San Francisco							
Downtown/Northeast	7.0	1.7	8.6	4.4	16.0	0.8	11.6
Northwest	17.1	7.0	12.5	8.1	19.4	11.1	35.4
Southwest	12.9	14.6	37.6	11.3	23.2	26.9	36.6
Southeast	6.4	12.8	1.7	12.4	22.5	2.8	0.0
Peninsula/South Bay (San Mateo and Santa Clara Counties)	10.9	13.7	10.4	14.7	4.9	48.2	13.2
East Bay (Alameda, Contra Costa, Napa and Solano Counties)	32.8	41.3	23.5	41.0	11.2	9.5	3.2
North Bay (Marin and Sonoma Counties)	12.9	8.9	5.7	8.1	2.8	0.7	0.0

(a) Residence areas are shown in Figure J.1.

(b) Distribution of residence locations of employees in each Subarea is shown for only those employees who would travel during the p.m. peak hour (4:30-5:30). Subarea boundaries are shown in Figure II.C.1.

SOURCE: Recht Hausrath & Associates and TJKM Transportation Consultants.

The 2000 p.m. peak hour trip distribution for non-work trips that would be expected under all the Alternatives is shown in Table J.8. This distribution is expected to remain the same as in 1990 under all five Alternatives as non-work travelers would continue to avoid regional travel during the peak hour. The modal split shown in Table J.8 is described under Modal Split and Trip Assignment, below.

Modal Split and Trip Assignment

Computer-assisted analysis of the Employee Survey data was used to provide existing modal splits for C-3 District employees on the basis of location of employment by Subarea, residence location and arrival and departure times. By comparing the travel

TABLE J.4: RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR; ALTERNATIVES 1, 2 and 3; 2000 (percent)

Residence Area(a)	Subarea(b) 1	2	3	4	5	6	7
San Francisco							
Downtown/Northeast	6.9	1.6	8.5	4.3	15.8	0.7	11.4
Northwest	15.9	6.0	10.8	7.0	17.1	7.9	32.9
Southwest	11.4	13.3	35.5	10.1	20.4	25.5	33.6
Southeast	6.2	12.7	1.5	12.3	22.2	2.7	0.0
Peninsula/South Bay (San Mateo and Santa Clara Counties)	11.3	14.0	11.0	15.0	5.7	48.6	14.7
East Bay (Alameda, Contra Costa, Napa and Solano Counties)	34.8	43.0	26.2	42.7	14.9	11.4	7.4
North Bay (Marin and Sonoma Counties)	13.5	9.4	6.5	8.6	3.9	1.2	0.0

(a) Residence areas are shown in Figure J.1.

(b) Distribution of residence locations of employees in each Subarea is shown for only those employees who would travel during the p.m. peak hour (4:30-5:30). Subarea boundaries are shown in Figure II.C.1.

SOURCE: TJKM Transportation Consultants

characteristics of individual business activities with those for Subareas, it was determined that the locations of employment by Subarea was a more useful variable in developing modal split estimates than was business activity alone. A large percentage of employees in each subarea tend to be in only one or two business activities which causes the travel characteristics of the Subarea to be very similar to the characteristics of the major business activity of the Subarea. The location of each Subarea is a strong determinant of mode choice, given the distance to major transportation facilities from each Subarea.

An example of how Subarea location relative to transportation facilities can influence mode choice can be seen in Table J.9 where only employees in the Subarea adjacent to the

TABLE J.5: RESIDENCE LOCATIONS FOR C-3 DISTRICT EMPLOYEES TRAVELING DURING THE P.M. PEAK HOUR; ALTERNATIVES 4 AND 5; 2000 (percent)

Residence Area(a)	Subarea(b) 1	2	3	4	5	6	7
San Francisco							
Downtown/Northeast	7.4	1.9	9.2	4.6	16.5	1.2	12.4
Northwest	16.2	6.4	11.0	7.5	18.1	10.0	32.2
Southwest	11.8	13.8	35.8	10.6	21.7	25.5	34.1
Southeast	6.4	12.8	1.7	12.4	22.5	2.8	0.0
Peninsula/South Bay (San Mateo and Santa Clara Counties)	11.0	13.8	10.5	14.8	5.0	48.3	13.9
East Bay (Alameda, Contra Costa, Napa and Solano Counties)	34.0	42.2	25.5	41.8	12.9	11.1	6.4
North Bay (Marin and Sonoma Counties)	13.2	9.1	6.3	8.3	3.3	1.1	0.0

(a) Residence areas are shown in Figure J.1.

(b) Distribution of residence locations of employees in each Subarea is shown for only those employees who would travel during the p.m. peak hour (4:30-5:30). Subarea boundaries are shown in Figure II.C.1.

SOURCE: TJKM Transportation Consultants

ferry terminal would use ferries for commute travel. Similar examples can be seen in the use of AC Transit and CalTrain where employees in Subareas distant from the terminals (or without good Muni connections) would not be expected to use those two systems.

Tables J.9, J.10 and J.11 show the estimated modal split that would be expected for work trips to and from the C-3 District for 1984, 1990 and 2000, respectively. The modal split estimates are based on the results from the Employee Survey, with predictions of change based on future residence locations and modal shift.

The main difference between the modal split for 1984 work trips and the modal split for 1982 work trips (based on the Employee Survey) is a shift from "Drive Alone" automobiles

TABLE J.6: TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS, BY MODE, 1984

Geographic Area (a)	%(b)	Primary Mode of Travel	%(c)
San Francisco Downtown/Northeast (Areas 14,15)	84.0	Drive alone	2.9
		Muni	7.1
		BART	1.0
		Walk	89.0
Northwest (Areas 11-13)	1.0	Drive alone	9.1
		Muni	90.9
Southwest (Areas 6-10)	2.0	Drive alone	9.2
		Muni	80.8
		BART	10.0
Southeast (Areas 1-5)	2.0	Drive alone	9.2
		Muni	80.8
		BART	10.0
Peninsula/South Bay (San Mateo & Santa Clara Counties)	3.0	Drive alone	25.0
		BART	25.0
		SPRR	50.0
East Bay (Alameda,Contra Costa,Napa & Solano Counties)	6.0	Drive alone	37.4
		BART	62.6
North Bay (Marin & Sonoma Counties)	2.0	Drive alone	67.3
		GGT Bus	32.7

(a) Geographic Areas are shown in Figure J.1. San Francisco Transportation study areas are shown in Figure IV.E.1.
(b) Percent of travel with origins and/or destinations in each geographic area.
(c) Percent of travel in each geographic area using listed mode of travel.

SOURCE: TJKM Transportation Consultants

to transit. The differences include approximately a one percent shift to BART and to Muni from the "Drive Alone" for East Bay trips which were made on the basis of estimates from the Muni 1982-1987 Five-Year Plan and past trends for modal shift of traffic on the Bay Bridge./3/

TABLE J.7: TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS, BY MODE, 1990

Geographic Area(a)	%(b)	Primary Mode of Travels	%(c)
San Francisco Downtown/Northeast (Areas 14,15)	84.0	Drive alone	2.8
		Muni	7.2
		BART	1.0
		Walk	89.0
Northwest (Areas 11-13)	1.0	Drive alone	7.5
		Muni	92.5
Southwest (Areas 6-10)	2.0	Drive alone	7.7
		Muni	82.3
		BART	10.0
Southeast (Areas 1-5)	2.0	Drive alone	7.7
		Muni	82.3
		BART	10.0
Peninsula (San Mateo & Santa Clara Counties)	3.0	Drive alone	21.7
		BART	26.7
		SPRR	51.6
East Bay (Alameda,Contra Costa,Napa & Solano Counties)	6.0	Drive alone	32.4
		BART	67.6
North Bay (Marin & Sonoma Counties)	2.0	Drive alone	58.8
		GGT Bus	41.2

(a) Geographic Areas are shown in Figure J.1. San Francisco Transportation study areas are shown in Figure IV.E.1.
(b) Percent of travel with origins and/or destinations in each geographic area.
(c) Percent of travel in each geographic area using listed mode of travel.

SOURCE: TJKM Transportation Consultants

For non-work trips for 1984, the modal split was developed from a survey of visitors at the Embarcadero Center./1/ Results from this survey were similar to results described in a report on non-work travel by employees in major urban areas./4/ The mode split estimates for non-work trips in 1984 are shown in Table J.6. Mode choice for non-work trips is dependent upon the origin and destination of the trips, with walking the primary

TABLE J.8: TRIP DISTRIBUTION AND MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT NON-WORK TRIPS, BY MODE, ALTERNATIVES 1 THROUGH 5, 2000

Geographic Area(a)	%(b)	Primary Mode of Travels	%(c)
San Francisco	84.0	Drive alone	2.6
Downtown/Northeast		Muni	7.4
(Areas 14,15)		BART	1.0
		Walk	89.0
Northwest	1.0	Drive alone	4.7
(Areas 11-13)		Muni	95.3
Southwest	2.0	Drive alone	5.2
(Areas 6-10)		Muni	84.8
		BART	10.0
Southeast	2.0	Drive alone	5.2
(Areas 1-5)		Muni	84.8
		BART	10.0
Peninsula	3.0	Drive alone	18.9
(San Mateo & Santa		BART	26.7
Clara Counties)		SPRR	54.4
East Bay	6.0	Drive alone	28.4
(Alameda,Contra		BART	71.6
Costa,Napa &			
Solano Counties)			
North Bay	2.0	Drive alone	51.5
(Marin & Sonoma		GGT Bus	48.5
Counties)			

(a) Geographic Areas are shown on Figure J.1. San Francisco study areas are shown in Figure IV.E.1.
(b) Percent of travel with origins and/or destinations in each geographic area.
(c) Percent of travel in each geographic area using listed mode of travel.

SOURCE: TJKM Transportation Consultants

mode in the Downtown/Northeast areas and Muni the primary mode to and from the other areas within San Francisco. Non-work trips in the p.m. peak hour have been assumed to be non-home-based (i.e., the trips would not be made to or from places of residence). For regional travel, the CalTrain (SPRR) is the primary mode to and from the Peninsula,

TABLE J.9: C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 1984

Geographic Area of Residence	Primary Mode of Travel to/from work in C-3	Subarea (%) 1	2	3	4	5	6	7
San Francisco Downtown/Northeast (Areas 14,15)	Drive alone	2.8	0.0	0.0	0.0	0.0	70.4	0.0
	Carpool	1.9	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	33.3	69.6	18.5	37.6	33.2	13.8	59.1
	BART	0.4	0.0	0.0	0.8	0.0	0.0	0.0
	Walk	58.5	30.4	81.5	61.6	66.8	15.8	40.9
	Taxi	3.1	0.0	0.0	0.0	0.0	0.0	0.0
Northwest (Areas 11-13)	Drive alone	20.0	43.0	2.1	40.3	23.0	51.6	57.6
	Carpool	11.1	0.0	19.5	12.6	20.9	14.8	0.0
	Muni	67.5	57.0	78.4	46.4	56.1	33.3	42.4
	BART	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.7	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.0	0.0	0.0	0.0	0.0	0.3	0.0
	Walk	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Taxi	0.1	0.0	0.0	0.7	0.0	0.0	0.0
Southwest (Areas 6-10)	Drive alone	21.6	51.7	48.4	24.9	35.4	66.4	46.6
	Carpool	6.2	3.6	12.9	5.2	5.3	6.0	6.1
	Vanpool	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Muni	65.9	29.4	30.2	47.8	59.3	27.3	38.8
	BART	5.9	15.3	8.5	13.0	0.0	0.3	7.9
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.2
	Bicycle	0.0	0.0	0.0	9.1	0.0	0.0	0.2
Southeast (Areas 1-5)	Drive alone	17.5	59.5	0.0	49.4	21.7	10.4	0.0
	Carpool	34.5	11.7	0.0	0.8	14.6	64.2	0.0
	Vanpool	1.0	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	12.3	12.8	100.0	28.4	38.5	2.3	0.0
	BART	31.9	14.3	0.0	16.6	2.0	23.1	0.0
	Jitney	1.4	1.7	0.0	0.0	12.5	0.0	0.0
	Motorcycle	1.2	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Walk	0.0	0.0	0.0	4.8	0.0	0.0	0.0
	Taxi	0.0	0.0	0.0	0.0	10.7	0.0	0.0
Peninsula (San Mateo & Santa Clara Counties)	Drive alone	21.9	15.0	27.7	22.5	18.8	4.5	0.0
	Carpool	8.5	17.8	71.4	25.9	0.0	77.9	37.8
	Vanpool	0.4	1.9	0.0	0.0	0.0	0.0	0.0
	Muni	2.7	0.0	0.0	3.0	0.0	0.0	0.0
	BART	26.8	20.0	0.9	27.9	39.9	8.3	62.2
	Sam Trans	13.4	18.3	0.0	0.0	41.1	6.2	0.0
	SPRR	26.1	23.2	0.0	11.5	0.2	3.1	0.0
	Jitney	0.2	2.8	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.0	0.0	0.0	9.2	0.00	0.0	0.0
East Bay (Alameda, Contra Costa, Napa & Solano Counties)	Drive alone	2.2	4.6	1.5	9.3	18.4	10.4	0.0
	Carpool	16.1	19.5	69.0	35.9	1.0	0.3	0.0
	Vanpool	8.1	7.1	0.0	0.0	0.0	0.0	0.0
	BART	49.1	31.1	7.0	50.3	76.4	54.1	0.0
	AC Transit	23.4	36.4	22.5	4.4	4.2	35.2	0.0
	Charter/club bus	1.1	1.3	0.0	0.1	0.0	0.0	0.0
North Bay (Marin & Sonoma Counties)	Drive alone	18.3	14.1	15.1	24.1	29.6	26.7	0.0
	Carpool	15.3	3.1	50.0	23.2	6.8	10.7	0.0
	Vanpool	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Charter/club bus	6.5	6.3	0.0	0.0	0.0	0.0	0.0
	Golden Gate Transit Bus	51.2	34.0	34.9	52.7	63.6	62.6	0.0
	Golden Gate Transit Ferry	4.7	39.4	0.0	0.0	0.0	0.0	0.0
	Tiburon Ferry	1.6	3.1	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.0

SOURCE: TJKM Transportation Consultants

TABLE J.10: C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 1990

Geographic Area of Residence	Primary Mode of Travel to/from work in C-3	Subarea (%) 1	2	3	4	5	6	7
San Francisco Downtown/Northeast (Areas 14,15)	Drive alone	2.2	0.0	0.0	0.0	0.0	70.4	0.0
	Carpool	1.9	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	33.9	69.6	18.5	37.6	33.2	13.8	59.1
	BART	0.4	0.0	0.0	0.8	0.0	0.0	0.0
	Walk	58.5	30.4	81.5	61.6	66.8	15.8	40.9
	Taxi	3.1	0.0	0.0	0.0	0.0	0.0	0.0
Northwest (Areas 11-13)	Drive alone	18.8	42.0	2.1	39.5	22.0	51.0	56.8
	Carpool	11.1	0.0	19.5	12.6	20.9	14.8	0.0
	Muni	68.7	58.0	78.4	47.2	57.1	33.9	43.2
	BART	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.7	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.0	0.0	0.0	0.0	0.0	0.3	0.0
	Walk	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Taxi	0.1	0.0	0.0	0.7	0.0	0.0	0.0
Southwest (Areas 6-10)	Drive alone	20.4	51.2	47.9	24.0	34.3	65.9	45.9
	Carpool	6.2	3.6	12.9	5.2	5.3	6.0	6.1
	Vanpool	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Muni	67.1	29.9	30.7	48.7	60.4	27.8	39.5
	BART	5.9	15.3	8.5	13.0	0.0	0.3	7.9
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.2
	Bicycle	0.0	0.0	0.0	9.1	0.0	0.0	0.2
Southeast (Areas 1-5)	Drive alone	15.8	58.3	0.0	48.2	21.0	10.4	0.0
	Carpool	34.5	11.7	0.0	0.8	14.6	64.2	0.0
	Vanpool	1.0	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	12.5	13.0	100.0	28.9	39.2	2.3	0.0
	BART	33.4	15.3	0.0	17.3	2.0	23.1	0.0
	Jitney	1.4	1.7	0.0	0.0	12.5	0.0	0.0
	Motorcycle	1.2	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Walk	0.0	0.0	0.0	4.8	0.0	0.0	0.0
	Taxi	0.0	0.0	0.0	0.0	10.7	0.0	0.0
Peninsula (San Mateo & Santa Clara Counties)	Drive alone	18.3	13.1	27.7	19.4	18.8	3.7	0.0
	Carpool	8.5	17.8	71.4	25.9	0.0	77.9	37.8
	Vanpool	0.4	1.9	0.0	0.0	0.0	0.0	0.0
	Muni	2.7	0.0	0.0	3.0	0.0	0.0	0.0
	BART	26.7	20.0	0.9	27.9	39.9	8.3	62.2
	Sam Trans	13.9	20.8	0.0	0.0	41.1	6.5	0.0
	SPRR	29.3	23.6	0.0	14.6	0.2	3.6	0.0
	Jitney	0.2	2.8	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.0	0.0	0.0	9.2	0.0	0.0	0.0
East Bay (Alameda, Contra Costa, Napa & Solano Counties)	Drive alone	1.8	3.9	1.5	8.8	18.4	10.4	5.7
	Carpool	16.1	19.5	69.0	35.9	1.0	3.6	0.0
	Vanpool	8.1	7.1	0.0	0.0	0.0	0.0	0.0
	BART	49.5	31.8	7.0	50.8	76.4	54.1	94.3
	AC Transit	23.4	36.4	22.5	4.4	4.2	31.9	0.0
	Charter/club bus	1.1	1.3	0.0	0.1	0.0	0.0	0.0
North Bay (Marin & Sonoma Counties)	Drive alone	15.1	12.0	12.0	23.1	18.9	26.3	0.0
	Carpool	16.5	3.1	50.0	23.2	6.8	10.7	0.0
	Vanpool	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Charter/club bus	6.5	6.3	0.0	0.0	0.0	0.0	0.0
	Golden Gate Transit Bus	51.4	35.2	38.0	53.7	24.3	63.0	0.0
	Golden Gate Transit Ferry	6.5	40.3	0.0	0.0	0.0	0.0	0.0
	Tiburon Ferry	1.6	3.1	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.0

SOURCE: TJKM Transportation Consultants

TABLE J.11: C-3 DISTRICT EMPLOYEE MODAL SPLIT FOR P.M. PEAK-HOUR C-3 DISTRICT PRIMARY WORK TRIPS BY PLACE OF RESIDENCE AND SUBAREA, 2000

Geographic Area of Residence	Primary Mode of Travel to/from work in C-3	Subarea (%) 1	2	3	4	5	6	7
San Francisco Downtown/Byrtheast (Areas 14,15)	Drive alone	1.2	0.0	0.0	0.0	0.0	69.9	0.0
	Carpool	1.9	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	34.9	69.6	18.5	37.6	33.2	14.2	59.1
	BART	0.4	0.0	0.0	0.8	0.0	0.0	0.0
	Walk	58.5	30.4	81.5	61.6	66.8	15.8	40.9
	Taxi	3.1	0.0	0.0	0.0	0.0	0.0	0.0
Northwest (Areas 11-13)	Drive alone	16.7	40.3	0.5	38.1	20.3	50.0	55.5
	Carpool	11.1	0.0	19.5	12.6	20.9	14.8	0.0
	Muni	70.8	59.7	80.0	48.6	58.8	34.9	44.5
	BART	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.7	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.0	0.0	0.0	0.0	0.0	0.3	0.0
	Walk	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Taxi	0.1	0.0	0.0	0.7	0.0	0.0	0.0
Southwest (Areas 6-10)	Drive alone	18.2	50.3	47.0	22.5	32.5	65.1	44.7
	Carpool	6.2	3.6	12.9	5.2	5.3	6.0	6.1
	Vanpool	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Muni	69.3	30.8	31.6	50.2	62.2	28.6	40.7
	BART	5.9	15.3	8.5	13.0	0.0	0.3	7.9
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.2
	Bicycle	0.0	0.0	0.0	9.1	0.0	0.0	0.2
Southeast (Areas 1-5)	Drive alone	15.4	57.9	0.0	47.3	19.8	10.3	0.0
	Carpool	34.5	11.7	0.0	0.8	14.6	64.2	0.0
	Vanpool	1.0	0.0	0.0	0.0	0.0	0.0	0.0
	Muni	12.9	13.4	100.0	29.8	40.4	2.4	0.0
	BART	33.4	15.3	0.0	17.3	2.0	23.1	0.0
	Jitney	1.4	1.7	0.0	0.0	12.5	0.0	0.0
	Motorcycle	1.2	0.0	0.0	0.0	0.0	0.0	0.0
	Bicycle	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Walk	0.0	0.0	0.0	4.8	0.0	0.0	0.0
	Taxi	0.0	0.0	0.0	0.0	10.7	0.0	0.0
Peninsula (San Mateo & Santa Clara Counties)	Drive alone	15.1	12.0	27.7	16.7	12.2	3.7	0.0
	Carpool	8.5	17.8	71.4	25.9	0.0	77.9	37.8
	Vanpool	0.4	1.9	0.0	0.	0.0	0.0	0.0
	Muni	2.8	0.0	0.0	3.0	0.0	0.0	0.0
	BART	26.7	20.0	0.9	27.9	39.9	8.3	62.2
	Sam Trans	15.4	21.3	0.0	0.0	47.7	6.5	0.0
	SPRR	29.9	24.2	0.0	17.3	0.2	3.6	0.0
	Jitney	0.2	2.8	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.0	0.0	0.0	9.2	0.0	0.0	0.0
East Bay (Alameda,Contra Costa,Napa & Solano Counties)	Drive alone	1.4	2.7	0.9	7.6	10.7	7.4	5.7
	Carpool	16.1	19.5	69.0	35.9	1.0	3.6	0.0
	Vanpool	8.1	7.1	0.0	0.0	0.0	0.0	0.0
	BART	54.4	43.9	16.2	52.8	84.1	57.1	94.3
	AC Transit	18.9	25.5	13.9	3.6	4.2	31.9	0.0
	Charter/club bus	1.1	1.3	0.0	0.1	0.0	0.0	0.0
North Bay (Marin & Sonoma Counties)	Drive alone	12.3	8.3	9.8	19.4	10.7	26.3	0.0
	Carpool	16.5	3.1	50.0	23.2	6.8	10.7	0.0
	Vanpool	2.0	0.0	0.0	0.0	0.0	0.0	0.0
	Charter/club bus	6.5	6.3	0.0	0.0	0.0	0.0	0.0
	Golden Gate Transit Bus	54.2	38.9	40.2	57.4	82.5	63.0	0.0
	Golden Gate Transit Ferry	6.5	40.3	0.0	0.0	0.0	0.0	0.0
	Tiburon Ferry	1.6	3.1	0.0	0.0	0.0	0.0	0.0
	Motorcycle	0.4	0.0	0.0	0.0	0.0	0.0	0.0

SOURCE: TJKM Transportation Consultants

BART is the primary mode to and from the East Bay, and the "Drive Alone" automobile is the primary mode to and from the North Bay.

For 1990, the modal split for work trips by C-3 District employees is shown in Table J.10. The primary mode shift in San Francisco is approximately an 1.8 percent shift to Muni from "Drive Alone" automobile for each Subarea, except for those Subareas where essentially no "Drive Alone" travel occurs for work trips during the p.m. peak hour. For regional travel, the primary mode shift is to transit from "Drive Alone." The shifts for East Bay and North Bay travel are based on the capacities of the bridges, with future trips shifted from the "Drive Alone" category to transit or to ridesharing to maintain vehicular traffic at capacity on the bridges during the p.m. peak hour.

Travel without an origin or destination in the C-3 District has been assumed to follow a similar modal split pattern that would have an increase in ridesharing (carpool, vanpool) and transit use. However, since transit service is not as readily available to this segment of the travel market as to C-3 District travelers, growth in non-C-3 travel has been estimated on the basis of historical trends./5/ To calculate the proportion of non-C-3 travel in the transportation network, the C-3 District component of the total regional travel was subtracted from the total travel for each corridor. The non-C-3 travel was increased for each future year based on historical trends for each corridor. The C-3 District travel was added to the projected non-C-3 travel to give total travel.

For 1990, the mode shift for non-work trips exhibits trends similar to that for work trips. The 1990 mode split is shown in Table J.7. The primary changes from 1984 to 1990 would be shifts to Muni, to BART, to CalTrain (SPRR) and to Golden Gate Transit buses from "Drive Alone" automobiles. The East Bay and North Bay shifts are made on the basis of the capacity of the bridges.

For 2000, the modal split for work trips by C-3 District employees is shown in Table J.11. The modal split under the five Alternatives in 2000 would be equivalent for the five Alternatives. Changes in mode have been assumed to occur. Because the freeway and bridge network would reach or exceed capacity in 1990, no significant differences in modal split for the five Alternatives has been identified. The shifts in mode would be from "Drive Alone" to transit, including a shift of approximately three percent to Muni. The regional mode split would include shifts to BART, Golden Gate Transit buses,

SamTrans and CalTrain (SPRR). These shifts were made on the basis of the capacity of the bridges and roadways providing regional access to the C-3 District.

The travel projections for through traffic and other traffic with no origin or destination in the C-3 District are based on historical trends, similar to the method described for 1990 travel./5/

PEDESTRIAN CIRCULATION

Measurement of pedestrian activity is based on an average flow rate of pedestrians per foot of (effective) sidewalk width per minute (p/f/m). These rates vary from approximately 0.5 to greater than 18. The rates have been divided into categories indicating the degree of congestion. The categories and the corresponding flow rates are shown in Table J.12. Figure J.2 illustrates the conditions on sidewalks for each flow rate category.

The first flow category (or regime) is "Open". This regime indicates very light pedestrian activity with free choice of walking speed and no conflicts. The subsequent categories range from "Unimpeded" to "Impeded" to "Constrained" to "Crowded" to "Congested" and finally to "Jammed" with shuffling movements only and unavoidable conflicts.

Total sidewalk width is measured as the distance from curb to building; however, effective width is calculated by subtracting the width occupied by obstructions from the total width. Thus, a sidewalk with a total width of eight feet may have a much narrower effective width if trees, poles or other obstructions block part of the sidewalk. The calculation methodology consists of making counts of the total number of pedestrians moving in each direction past a specific point on a sidewalk in a specific period of time. Pedestrians per foot per minute are calculated by dividing the number of pedestrians counted by the length of the count period (in minutes) to give pedestrians per minute. Pedestrians per minute is divided by the effective width of the sidewalk where the count was made to give pedestrians per foot per minute which can be used as an indicator of operating conditions. The noon hour and the p.m. peak hour were chosen as the analysis periods on the basis of a previous study that showed pedestrian activity to be greatest during these two time periods/6/.

TABLE J.12: PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Average Flow Rate (P/F/M)(a)
Open	Free Selection	None	-0.5
Unimpeded	Some Selection	Minor	0.5 - 2
Impeded	Some Selection	High Indirect Interaction	2 - 6
Constrained	Some Restriction	Multiple	6 - 10
Crowded	Restricted	High Probability	100 - 14
Congested	All reduced	Frequent	14 - 18
Jammed	Shuffle Only	Unavoidable	(b)

(a) P/F/M=Pedestrians per foot of sidewalk width per minute
(b) For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Pushkarev and Zupan, Urban Space for Pedestrians

NOTES - Trip Generation, Modal Split and Pedestrian Circulation

/1/ Survey conducted by Environmental Science Associates on June 17, 1982, at Embarcadero Center.

/2/ Trip generation rates are from the following references:

California Department of Transportation (CalTrans), Progress Report(s) on Trip Ends Generation Research Counts, 14 reports published periodically from 1964 through 1982.

Institute of Transportation Engineers, Trip Generation, 1979.

San Diego Association of Governments and CalTrans (District 11), San Diego Traffic Generators, 1981.

Arizona Department of Transportation, Arizona Traffic Generators, 1979. Transportation Research Board, Quick Response Urban Travel Estimation Techniques and Transferable Parameters, National Cooperative Highway Research Program Report 187, 1978.

/3/ Metropolitan Transportation Commission, Travel Observations of the Bay Bridge Corridor, October 21, 1981.



The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.





The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza—which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture—have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.



Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

FIGURE J.2:
PHOTOS OF PEDESTRIAN FLOW LEVELS

SOURCE: Pushkarev and Zupan

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.





The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.



The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.



The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

FIGURE J.2 (CONTINUED):
PHOTOS OF PEDESTRIAN FLOW LEVELS

SOURCE: Pushkarev and Zupan

/4/ Murthy Bondada, "Intra-CBD Secondary Travel Patterns of Downtown Workers," Transportation Engineering Journal of ASCE, Vol. 108 (January, 1982), pp.15-27.

/5/ Historic trends were calculated on the basis of information published in the following reports:

Metropolitan Transportation Commission, Travel Observations of the Bay Bridge Corridor, October 21, 1981.

Metropolitan Transportation Commission, Travel Survey Series MA-53 to MA-57, October 1979 to October 1981.

Homburger and Dock, Trends in Traffic Patterns at the Bay Bridge and Caldecott Tunnel, U.S. Department of Transportation, DOT-BIP-WP 32-3-77, July 1977.

Office of the Auditor - Controller, Comparative Record of Traffic for the Month of November, May 27, 1937 through November 30, 1982, Golden Gate Bridge, Highway and Transportation District.

/6/ City and County of San Francisco, Department of City Planning, Center City Pedestrian and Goods Movement Study, September 1981.

K. COMMUNITY SERVICES

SOLID WASTE

All solid waste projections are based upon actual 1981 tonnages using collection routes most closely corresponding to the C-3 District subareas. From these tonnage figures and from known 1981 building floor areas in the C-3 District (see Appendix C), Golden Gate Disposal Company of San Francisco prepared solid waste generation rates in units of pounds per square foot of space per year (see Table K.1). Using these generation rates and the projections for future development from Section V.B, Land Use and Real Estate Development, solid waste generation through the year 2000 was projected.

The 1981 tonnage numbers used in this analysis are the best available because they are recent, based on actual subarea collection weights, and specific to San Francisco. Waste generation figures from several other sources, including the State Solid Waste Management Board, the Environmental Protection Agency and the Final Draft Solid Waste

TABLE K.1: C-3 DISTRICT SOLID WASTE GENERATION, BY SUBAREA, 1981

Subarea	Tons per Year (a)	1981 Generation Rate (lb per sq. ft. per year)
1	32,240	1.5
2	3,120	1.0
3	7,310	2.5
4	3,350	1.5
5	7,900	1.5
6	11,440	2.0
7	7,250	2.0

(a) Weighed at the Brisbane Transfer Station.

SOURCE: Golden Gate Disposal Company

Management Plan of the City and County of San Francisco, were also examined as part of the analysis. The former two sources were found to be less recent statewide and national averages and therefore not applicable to San Franscisco's current situation. The San Francisco Final Draft Solid Waste Management Plan was used as the reference for total City waste (688,000 tons), but did not contain specific information about C-3 District wastes or waste generation rates.

In the Land Use and Real Estate analysis, Subarea 2 (East South-of-Market) and Subarea 3 (Central South-of-Market) were projected to experience a marked shift in land use over time, primarily from industrial to office use. Subarea 3 would show this trend by 1984, and Subarea 2 would show a similar shift by 1990. Both Subareas are projected to continue this shift through the year 2000. Because of this projected land use trend, the generation rates used for these two Subareas were adjusted to 1.5 lb per sq. ft. Because office space is expected to be more dominant in the future, office wastes, such as paper, would replace industrial wastes, such as metals and wooden crates, in the waste stream. The generation rates for Subareas 2 and 3 were adjusted to reflect this shift by using a rate developed for Subarea 1, (the Central Office area), the one most dominated by office uses.

POLICE

Table K.2, below shows reported criminal incidents for 1982 for selected sample addresses. The key contaning the addresses themselves is in Table K.3. Using these crime rates and the projections for future development from Section V.B., Land Use and Real Estate Development, changes in annual crime incidents for the C-3 District through the year 2000 were projected.

Table K.4 shows existing (1981-82) ratios between personnel and reported criminal incidents. These ratios were used to project how a change in reported incidents would affect demand for Police personnel.

Table K.5 shows existing (1981-82) cost ratios for the Police Department's annual operating budget. The information presented assumes that all operating costs are proportional to the number of personnel in the Department. It is also assumed that Special Programs make up a fixed percentage of the budget. This table was used to project (in 1981-82 dollars) the costs associated with projected demands for additional personnel.

TABLE K.2: 1982 REPORTED CRIMINAL INCIDENTS FOR SAMPLE ADDRESSES

Address(a)	Sub area	Land Use	G.S.F. (1000)	Police District & Plot	Incidents Per 1000 G.S.F./Yr.	Homicide	Rape	Strong Arm Robb.	Armed Robb.	Agg. Assault	Non-Agg. Assault	Resid. Burg.	Com. Burg.	Grand Theft	Petty Theft	Auto Theft	Other Reports	Total Incidents
1	1	Office	498	C 342	.06									9	11	1	7	28
2	1	Office	1771	C 356	.00									1				1
3	1	Office	1800	S 612	.01	1		1	3				1	6	7		5	24
4	1	Office	442	C 356	.03									3	8		4	15
5	1	Retail	267	C 356	.01								1				2	3
6	1	T. Hotel	818	C 344	.09						2		4	35	11		18	70
7	1	T. Hotel	540	S 608	.07								6	14	6		13	39
8	1	R. Hotel	100	C 356	.10								2	5			3	10
9	1	Resident	345	C 336	.02							2		4			1	7
10	2	Office	179	S 620	.04						1		1	2	1		3	8
11	2	Industry	205	S 622	.13			1		1			2	10	6	3	4	27
12	2	Parking	137	S 622	.09									6	3	2	1	12
13	3	Office	385	S 606	.02					1				2			6	9
14	3	W' House	249	S 618	.00							1						1
15	3	Industry	80	S 616	0													0
16	3	Parking		S 606	0													0
17	4	Office	451	S 602	.01						1		2				3	6
18	5	Office	66	S 604	.17			1		1			2	2	1		4	11
19	5	T. Hotel	1300	C 360	.09				3		4		27	33	2	2	40	111
20	5	R. Hotel	21	S 604	.33								4				3	7
21	5	Resident	21	C 360	.67			1				1		1			11	14
22	6	Office	333	C 362	.06	1							1	4	5		9	20
23	6	Retail	360	C 362	.57					1	7		28	65	66	1	38	206
24	6	T. Hotel	571	C 354	.09						3		15	15	7		14	54
25	6	Education	86	C 606	.05									1		1	2	2
26	7	Office	664	C 348	.01						1			4	1		2	8
27	7	Resident	189	C 348	.08				1		1			5	2	1	5	15
28	7	Education	397	C 348	.02				1					2	2		1	6

(a) See Table K.3 for key to addresses.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Police Department.

TABLE K.3: SELECTED SAMPLE ADDRESSES FOR TABLE K.2

Address No.	Address
1	Transamerica Building, 600 Montgomery Street
2	Bank of America Headquarters, 555 California Street
3	One Market Plaza
4	Crown Zellerbach, 1 Bush Street
5	Hasting's, 317 Montgomery Street
6	Hyatt Regency, Embarcadero Center
7	Sheraton Palace, 639 Market Street
8	Sutter Hotel, 191 Sutter Street
9	Golden Gate Commons, 440 Davis Court
10	General Electric, 55 Hawthorne Street
11	500 Block Howard Street (industrial)
12	Howard Street Parking
13	Crocker Building, 155 5th Street
14	Emporium Warehouse, 380 Tehama Street
15	Eng-Skell Building, 1035 Howard Street
16	5th & Mission Parking Garage
17	State Compensation Fund Building, 1275 Market Street
18	Grant Building, 1095 Market Street
19	Hilton Hotel, 333 O'Farrell Street
20	Kean Hotel, 1018 Mission Street
21	250 Taylor Street (residences)
22	Flood Building, 870 Market Street
23	Macy's, Stockton & O'Farrell Street
24	Hyatt Union Square
25	San Francisco Community College, 800 Mission Street
26	Hartford Building, 650 California Street
27	700 Block California Street (residences)
28	Cogswell College, 600 Stockton Street

SOURCE: Environmental Science Associates, Inc.

FIRE

Table K.6 shows fire and non-fire incidents for both 1981 and 1982 for selected sample addresses. The incident rates for these buildings were used to project changes in projected development in the C-3 District through the year 2000.

Table K.7 shows firefighting unit service hours per fire and non-fire incident in the C-3 District. These factors were derived from Fire Department records of how many service

TABLE K.4: EXISTING (1981-82) POLICE DEPARTMENT PESONNEL RATIOS

Category	Ratio
Patrol (Field Operations Bureau including the Muni Patrol, but excluding the Traffic Division	9.6 persons per 1,000 reported incidents per year
Investigation (Investigations Bureau	1.7 persons per 1,000 reported incidents per year
Traffic (Traffic Division)(a)	0.05 persons per million sq. ft. of building space
Support (Support Services Bureau, 85% of the Department's Civilians)	0.45 persons per other staff

(a) Based on findings in Gruen Gruen + Associates, March 1981, Fiscal Impacts of New Downtown Highrises on the City and County of San Francisco.

SOURCE: Environmental Science Associates, Inc., based on San Francisco Police Department, August 1982, and Gruen Gruen + Associates, March 1981.

TABLE K.5: POLICE DEPARTMENT COST RATIOS, 1981-82

Category	$/Person/Year
Labor (including fringe benefits)	$45,500
Contractual Services, Expenses, Services of Other Departments	2,400
Equipment and Supplies	700
Special Programs	Additional 0.6% of Budget

SOURCE: Environmental Science Associates, Inc., based on San Francisco Police Department, August 1982.

hours per year were spent in the C-3 District and how many incidents were responded to in the C-3 District by each firefighting unit in the City.

TABLE K.6: FIRE AND NON-FIRE INCIDENTS IN 1981 AND 1982 FOR SELECTED SAMPLE ADDRESSES

Building	Address	Gross Sq. Ft.	1981 and 1982 Incidents	
			Fire	Non-Fire
Transamerica Building	600 Montgomery Street	523,143	1	5
Shaklee Corporation	444 Market Street	717,936	1	11
Crocker Building	155 Fifth Street	385,000	0	9
Emporium Warehouse	380 Tehama Street	248,975	0	1
Eng-Skell Building	1035 Howard Street	80,000	0	0
Hyatt Regency	5 Embarcadero Center	818,000	0	5
Hyatt Union Square	345 Stockton Street	570,860	1	5
Crystal Hotel	128-132 Eddy Street	70,400	1	1
Empress Hotel	144 Eddy Street	37,746	3	2
Kean Hotel	1018 Mission Street	21,250	0	1
Saks Fifth Avenue	384 Post Street	112,000	0	2
Golden Gate Commons	440 Davis Court	395,000	2	4
Taylor Street Apts.	250 Taylor Street	20,844	0	5
Cogswell College	600 Stockton Street	396,765	0	0
5th & Mission Garage	Fifth & Mission Sts.	723,600	0	5

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

TABLE K.7: FIREFIGHTING UNIT SERVICE HOURS FOR FIRE AND NON-FIRE INCIDENTS IN THE C-3 DISTRICT, 1982

Firefighting Unit	C-3 District Service Hours Per C-3 District Incident (a)	
	Fire Incidents	Non-Fire Incidents
Division	0.059	0.014
Battalion	0.163	0.034
Engine Co.	0.436	0.113
Truck Co.	0.232	0.063
Rescue Co.	0.051	0.036

(a) Derived by dividing each unit's total 1982 fire and non-fire service hours spent in the C-3 District by the total number of fire and non-fire incidents reported in the C-3 District for 1982, whether or not that particular unit responded to each incident. Thus, these factors reflect the fact that not all C-3 District incidents are responded to by every unit spending time in the C-3 District.

SOURCE: Environmental Science Associates, Inc., based on information from the San Francisco Fire Department.

NOTE - Community Services

/1/ Manuel Conte, President, Golden Gate Disposal Company, correspondence dated January 21, 1983.

APPENDIX L: FISCAL FACTORS - METHODOLOGY AND SUPPLEMENTAL TABLES

TABLE L.1: ASSESSED VALUE OF C-3 DISTRICT AS PERCENTAGE OF ASSESSED VALUE CITYWIDE: 1982-83 ASSESSMENT ROLL

C-3 District (a)	
Net Assessed Value of Secured Property on Local Roll (b)	$4,535,930,499
Net Assessed Value of Secured State-Assessed Property (c)	$38,143,950
Total: Net Assessed Value of Local- and State-Assessed Property	$4,574,074,449
Citywide (d)	
Net Assessed Value of Secured Property on Local Roll	$19,003,222,140
Net Assessed Value of Secured State-Assessed Property	$1,440,303,000
Total: Net Assessed Value of Local- and State-Assessed Property	$20,443,525,140
C-3 District as % of City	
Net Assessed Value of Secured Property in C-3 District as Percentage of Net Assessed Value of Secured Property Citywide	22.4%

NOTE: Net assessed value includes the value of secured real and personal property. The value of exemptions (homeowners and other exemptions) has been deducted.

(a) The assessed value of property in the C-3 District was obtained from the Assessor's Office, City and County of San Francisco. At the request of Recht Hausrath & Associates, the 1982-83 assessed value of locally-assessed property located in the C-3 District was compiled from the City's computerized files. The 1982-83 assessed value of state-assessed property in the C-3 District was compiled manually from the Assessor's records.

TABLE L.1: ASSESSED VALUE OF C-3 DISTRICT AS PERCENTAGE OF ASSESSED VALUE CITYWIDE: 1982-83 ASSESSMENT ROLL (Continued)

(b) The local assessment roll consists of all property assessed by the Assessor's Office, City and County of San Francisco.

(c) The state Board of Equalization assesses property in San Francisco owned by public utilities, such as Pacific Telephone, Pacific Gas & Electric Company, and Southern Pacific. These assessments are added to the assessments of locally-assessed property to constitute the total assessed value of secured property.

(d) Based on summaries of citywide assessed value provided by Victor Udaloff, Chief Technical Services, Assessor's Office, City and County of San Francisco.

SOURCE: Recht Hausrath & Associates, based on information from Assessor's Office, City and County of San Francisco.

TABLE L.2: METHODOLOGY FOR ESTIMATING TAXABLE SALES IN THE C-3 DISTRICT, 1981

- Calculate C-3 share of taxable sales for each of three components of total taxable sales
  1) taxable transactions from retail stores
  2) taxable transactions from business and personal services (includes hotels, repair and personal services, and theatres)
  3) taxable transactions from all other outlets

1) C-3 District Taxable Retail Sales

- Estimate 1981 C-3 District retail spending for three different groups: (a)
  - C-3 District workers
  - tourists
  - other City residents and visitors
- Estimate percentage of C-3 District retail spending that is taxable:
  - C-3 District workers (b) 80%
  - tourists (b) 85%
  - other City residents and visitors (c) 90%
- Calculate C-3 District taxable sales for each group:

  (% taxable)(C-3 Retail spending) = C-3 District taxable retail sales
- Sum C-3 taxable retail sales from all groups for estimate of total C-3 District taxable retail sales

2) C-3 District Taxable Transactions from Business and Personal Services

- Determine amount of total City 1981 taxable transactions attributable to: (d)
  - hotels
  - all other services
- Assume C-3 share of total City transactions proportional to employment. Estimated C-3 share of total City employment, 1981: (e)
  - hotels 81%
  - all other services 39%
- Calculate C-3 taxable transactions:

  (.81)(total City taxable transactions for hotels)

  (.39)(total City taxable transactions for all other services)
- Sum C-3 taxable transactions from all groups for estimate of total C-3 District taxable transactions from Business and Personal services.

3) C-3 District Taxable Transactions from All Other Outlets

- Establish correspondence between Business Classification Codes (f) and employment categories used in this study
- Determine amount of total City 1981 taxable transactions attributable to different Business Classification groups (g)
- Assume C-3 District share of total City transactions proportional to employment (h)
- Calculate C-3 District taxable transactions for each group:

  (% employment in C-3)(1981 taxable transactions) = C-3 District taxable transactions
- Sum C-3 taxable transactions from all groups for estimate of total C-3 District taxable transactions from All Other Outlets.

- Calculate total taxable sales from C-3 District: (1) + (2) + (3) = Total Taxable Sales from C-3 District, 1981

TABLE L.2: METHODOLOGY FOR ESTIMATING TAXABLE SALES IN THE C-3 DISTRICT, 1981 (Continued)

(a) The C-3 District retail analysis was completed as part of the employment analysis conducted for this study. The methodology is described in Appendix H.

(b) SPUR, Impact of Intensive Highrise Development in San Francisco, 1975, pp. 262 and 265.

(c) Recht Hausrath & Associates estimate.

(d) California State Board of Equalization, Sales Statistical Report 2, Annual 1981, County of San Francisco.

(e) Estimate of current C-3 District employment prepared as part of the employment analysis conducted for this study. See Appendix H. Estimate of total City employment from State of California, Employment Development Department. See Table IV.C.4 for comparison of citywide and C-3 District employment. The self-employed workers not included in the EDD citywide figures have been allocated to employment categories in proportion to the relative size of the employment category, for this calculation.

(f) California State Board of Equalization, Business Taxes Code Book, June 1977.

(g) California State Board of Equalization, Sales Statistical Report 2, Annual 1981, County of San Francisco.

(h) See note (e).

SOURCE: Recht Hausrath & Associates.

TABLE L.3: PAYROLL/BUSINESS TAX COLLECTIONS FROM C-3 DISTRICT AS PERCENTAGE OF PAYROLL/BUSINESS TAX COLLECTIONS CITYWIDE: 1981

	Taxes Collected from Businesses Paying over $2,500 in Annual Taxes: 1981 (a)
C-3 District (b)	$45,569,804
Citywide (c)	$77,879,968
C-3 District as Percentage of Citywide Revenues	58.5%

(a) The data include only those tax collections from businesses that paid more than $2,500 in annual payroll or business taxes. This was done to account for the change in the small business exemption, effective January 1, 1982, that exempts taxpayers whose computed tax is $2,500 or less. During 1981, the small business exemption was lower, allowing only businesses whose computed tax was $500 or less to be exempt. Adjusting the data to reflect the higher exemption level allows the calculation of the District's share of citywide taxes to be consistent with existing City tax ordinances and thus more representative of the current relationship between C-3 and citywide tax collections.

(b) The payroll and business tax collections from businesses in the C-3 District were obtained from the Tax Collector's Office, City and County of San Francisco. At the request of Recht Hausrath & Associates, the tax collections from businesses located in the C-3 District were compiled from computerized files. Some multi-establishment businesses do not have address records on the computer files. Data on the taxes paid by those establishments located in the C-3 District were compiled manually by Richard Sullivan, Deputy Tax Administrator.

(c) Based on information provided by Richard Sullivan, Deputy Tax Administrator, Tax Collector's Office, City and County of San Francisco.

SOURCE: Recht Hausrath & Associates, based on information from Tax Collector's Office, City and County of San Francisco.

TABLE L.4: METHODOLOGY FOR ESTIMATING SHARE OF SAN FRANCISCO HOTEL TAX REVENUE GENERATED BY C-3 DISTRICT, 1981-82

C-3 District

A = number of hotel rooms in C-3 District (a)

B = average occupancy rate for C-3 District hotels, year-round (b)

C = average room rate for C-3 District hotels, early 1982 (c)

D = (A)(B)(C)(365 days/year) = annual hotel room revenues from C-3 District

San Francisco Hotels Outside the C-3 District

E = number of hotel rooms outside the C-3 District (a)

F = average occupancy rate for hotels outside the C-3 District (b)

G = average room rate for hotels outside the C-3 District, early 1982

H = (E)(F)(G)(365 days/year) = annual hotel room revenues outside the C-3 District

Share of San Francisco Hotel Tax Revenue Generated in the C-3 District

$$\frac{D}{D + H} = \frac{\text{hotel revenues from C-3 District}}{\text{San Francisco hotel revenues}} = 68.2\%$$

TABLE L.4: METHODOLOGY FOR ESTIMATING SHARE OF SAN FRANCISCO HOTEL TAX REVENUE GENERATED BY C-3 DISTRICT, 1981-82 (Continued)

(a) Based on analysis of San Francisco Convention and Visitors Bureau, San Francisco Lodging Guide, 1982. There are approximately 16,300 hotel and motel rooms in the C-3 District and 6,400 hotel and motel rooms elsewhere in the City.

(b) Based on review of several sources, including SPUR, Impact of Intensive Highrise Development on Downtown San Francisco, 1975, and recent newspaper reports and interviews concerning tourism in San Francisco, an average occupancy rate of 70 percent was chosen for these calculations.

(c) The weighted average room rate based on data in the San Francisco Lodging Guide, 1982, was estimated to be $75 per night for C-3 District hotel and motel rooms and $90 per night for hotel and motel rooms elsewhere in the City.

SOURCE: Recht Hausrath & Associates

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES

The forecast of property tax revenues from the C-3 District was based on the estimated change in assessed value of property in the District between 1984 and 2000. The forecast considered only the change in assessed value due to space added and removed in the C-3 District over the 16-year study period. Changes in the assessed value of existing property unaffected by the addition or removal of space were not included in the forecast.(a)

The methodology consisted of the following steps:

A. Estimate Assessed Value of Newly-Constructed Space Added in C-3 District

1) The value of new office space was assumed to vary by subarea.(b) The assumptions on value per sq. ft. of new office space are shown below:

Subarea	Value Per Sq. Ft. of New Office Space (1982 Dollars) (c)
1	$200
2	160
3	120
4	140
5	140
6	160
7	160

2) The value of new retail space was assumed to be the same as new office space. The retail value was assumed to vary by subarea, identical to office space (see Step A-1).

3) The value of new transient hotel space was assumed to be $130,000 per room (in 1982 dollars).(d)

4) New cultural/institutional/educational/other space would be added between 1984 and 1990 in the Yerba Buena Center redevelopment project area. Current plans call for most of this space to be cultural facilities owned by the Redevelopment Agency or the City. Since this space was assumed to be exempt from property taxation, it was excluded from the estimate of assessed value. The remaining space, about 235,000 sq. ft., was assumed to be subject to property taxation.(e) This taxable space was assumed to have a value equivalent to new office space in Subarea 3.

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

5) New parking would be added between 1984 and 1990 in the Yerba Buena Center redevelopment project area. This parking was assumed to be subject to property taxation.(f) The parking was assumed to have a value of $60 per sq. ft., or $21,000 per space (in 1982 dollars).(g)

6) The value of new housing constructed in the C-3 District was assumed to vary by subarea and by Alternative. The weighted average per-unit value (in 1982 dollars) of new housing added between 1984 and 1990 was assumed to be $183,000. The weighted average per-unit value (in 1982 dollars) of new housing added between 1990 and 2000 was assumed to be: Alternative 1, $277,000; Alternative 2, $201,000; Alternative 3, $239,000; Alternative 4, $126,000; and Alternative 5, $162,000.(h)

7) It was assumed that the value of all new space would rise at the rate of inflation (remaining constant on 1982 dollars) with the following exceptions:

   - It was assumed that Alternatives 3, 4 and 5 could result in somewhat higher values for new space added during the 1990-2000 period than Alternatives 1 and 2. This would be due to the market effects resulting from lower amounts of space relative to demand for Alternatives 3, 4 and 5. It was assumed that the values of new office and retail space added between 1990 and 2000 under Alternative 3 would be 5 percent higher by 2000 than the values shown in Step A-1. It was assumed that the values of new office and retail space added between 1990 and 2000 under Alternatives 4 and 5 would be 15 percent higher by 2000 than the values shown on Step A-1.(i)

8) Newly-constructed space in the C-3 District was assumed to be added in even annual increments over the 1984-1990 and 1990-2000 period.

9) The assessed value of new space in the year in which it would be added to the C-3 District was computed by multiplying the value of new space (as shown above) by the amount of new space (see Appendix G for forecasts of new space)

10) It was assumed that after its construction, the new space added in the C-3 District between 1984 and 2000 would not be sold prior to 2000. In other words, it was assumed that there would be no turnover of the property in the District that accounted for the new space, once the new space was added.(j)

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

11) It was assumed that in years following the year in which new space would be added, the assessed value of the new space would decline by 5.6 percent per year, in 1982 dollars. This is the net effect of a 2 percent limit on the annual growth in assessed value of unsold property (due to Proposition 13) and an 8 percent annual rate of inflation.(k)

B. Estimate Assessed Value of Space Converted to Offices

1) The value of space converted to offices from other uses was assumed to be two-thirds of the value of new office space added in the C-3 District.(l) The value of office conversions was assumed to vary by subarea. Refer to Steps A-1 and A-7 above for the value assumptions for new office space. The value of office space added by conversions was assumed to be two-thirds of the values shown in A-1 and A-7 (in 1982 dollars).

2) Office space created by conversion was assumed to be added in even annual increments over the 1984-1990 and 1990-2000 periods.

3) The assessed value of converted office space in the year in which it would be added to the C-3 District was computed by multiplying the value of the converted space (as described above) by the amount of converted space (see Appendix G for forecasts of space converted to offices).

4) It was assumed that after its conversion, the space converted to offices between 1984 and 2000 would not be sold prior to 2000. In other words, it was assumed that there would be no turnover of the property in the District that accounted for the converted space, once the space was converted.

5) It was assumed that in the years following the year in which space would be converted to offices, the assessed value of the converted space would decline by 5.6 percent per year, in 1982 dollars. This is the net effect of a 2 percent limit on the annual growth in assessed value of unsold property (due to Proposition 13) and an 8 percent annual rate of inflation.

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

C. Estimate Assessed Value Of Space Removed Due To Demolition Or Conversion

1) Based on a sample of the 1982-83 assessed value of existing space in the C-3 District, it was assumed that the space removed between 1984 and 2000 due to demolition or conversion would have the following average assessed values (in 1982 dollars):

Type of Space	Average Assessed Value Per Sq. Ft. Of Space Removed (1982 Dollars) (m)
Office	$42
Retail	35
Resident Hotel	15
Cultural/Institutional	30
Industrial/Warehouse	15
Parking	18

2) It was assumed that the space removed by demolition or conversion would be removed in even annual increments over the 1984-1990 and 1990-2000 periods.

3) It was assumed that prior to being demolished or converted, 1/40 of the remaining space to be removed would be sold each year.(n) It was assumed the new assessed value of this space subject to turnover would be twice its previous assessed value (in 1982 dollars).(o)

4) It was assumed that the assessed value of the unsold space remaining to be removed (39/40 of the total space remaining to be removed in a given year) would decline by 5.6 percent per year (in 1982 dollars). This is the net effect of a 2 percent limitation on the annual growth in assessed value of unsold property (due to Proposition 13) and an 8 percent annual rate of inflation.

5) The combined effect of the assumptions described in Steps C-3 and C-4 was to reduce the assessed value of space remaining to be removed by about 3 percent per year (in 1982 dollars).(p)

6) The assessed value of space removed due to demolitions or conversions was computed by multiplying the value of the removed space in the year it would be removed by the amount of removed space (see Appendix G for forecasts of space removed in the C-3 District).

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

D. Estimate Net Additional Assessed Value of Secured Property in 1990 and 2000 (q)

1) The marginal change in assessed value of secured property due to space added and removed in the C-3 District between 1984 and 2000 was computed by summing the results of Steps A and B, and subtracting from this sum the results of Step C. The marginal change in assessed value of secured property was calculated for 1990 and 2000, by Alternative (in 1982 dollars).

E. Estimate Net Additional Unsecured Property in 1990 and 2000 (r)

1) It was assumed that the average assessed value of unsecured property in the C-3 District is $18 per sq. ft. (in 1982 dollars).(s)

2) The average value of unsecured property per sq. ft. of space was applied to all space added and removed in the C-3 District, with following exceptions:

- The average value was not applied to new housing added in the C-3 District. It was assumed housing would be exempt from property taxation on unsecured property.
- The average value was not applied to parking added or removed in the C-3 District. It was assumed that parking would have negligible amounts of unsecured property.
- The average value was applied to only 235,000 sq. ft. of the 565,000 sq. ft. of space added in the cultural/institutional/educational/other category during 1984-1990. All the new space added in this category would be in the Yerba Buena Center redevelopment project area. Current plans call for most of this space to be cultural facilities owned by the Redevelopment Agency or the City. and thus exempt from taxation. The remaining space (about 235,000 sq. ft.) would be privately owned and subject to taxation.(t)
- Most of the space demolished in the cultural/institutional/educational/other category would be vacant space. It was assumed no unsecured property would be removed due to the demolition of this space. Thus, the average value was not applied to the amount of demolished space in this category.

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

3) The average value was assumed to remain constant in 1982 dollars.(u)

4) The net assessed value of unsecured property was computed by multiplying the average value by the amount of space added and removed in the C-3 District (see Appendix G for forecasts of space added and removed in the District). The net change in assessed value of unsecured property was calculated for 1990 and 2000, by Alternative (in 1982 dollars).

F. Estimate Net Additional Property Tax Revenues In 1990 and 2000

1) The marginal change in property tax revenues due to space added and removed in the C-3 District was computed by multiplying the net additional assessed value of secured and unsecured property in 1990 and 2000 (the sum of Steps D-1 and E-5) by 0.01.(v)

2) The distribution of property tax revenues among taxing jurisdictions was based on the distribution in effect in 1982-83.(w) The distribution is shown below:

Taxing Jurisdiction	Share Of One Percent Property Tax Rate
City and County of San Francisco	.87418
Open Space Fund	.025
County Superintendent of Schools	.00097
San Francisco Unified School District	.07699
San Francisco Community College District	.01444
Bay Area Air Quality Management District	.00209
BART	.00633
Total All Recipients	1.00000

NOTES

(a) By excluding the changes in assessed value of existing space in the C-3 District (except for the space removed by demolition or conversion), the forecasts could underestimate the marginal effects of the Alternatives on property tax revenues. This is because under the Alternatives with lower amounts of space relative to potential demand (Alternatives 3, 4 and 5) the real value of space could be higher by the end of the 1990-2000 period than the value of space under the other Alternatives (see Section B, Environmental

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

Impacts, and Appendix G for discussions of this effect). Thus, some of the existing property that is sold during the 1990-2000 period might be sold at a somewhat higher price under these Alternatives than under Alternatives 1 and 2. This could result in higher assessed values for the properties that are sold between 1990 and 2000 under Alternatives 3, 4 and 5 than for Alternatives 1 and 2. The forecasts did not account for this difference.

(b) The value of new space would vary by subarea due to differences in development costs and land value. Refer to Appendix D and Appendix G for more information.

(c) Estimates by Recht Hausrath & Associates, based on the results of the real estate analysis conducted for this study (see Appendix G and Appendix D) and information provided by Assessor's Office, City and County of San Francisco, on the assessed value of newly-constructed buildings in the District. The estimates include the value of land and improvements.

(d) Estimates by Recht Hausrath & Associates, based on the results of the real estate analysis conducted for this study (see Appendix G and Appendix D) and information provided by Assessor's Office, City and County of San Francisco, on the assessed value of hotels recently sold in the District. The estimates include the value of land and improvements.

(e) Based on the main program alternative of the Yerba Buena Center Redevelopment Plan, and a telephone conversation between Recht Hausrath & Associates and Kathy Wiles, Senior Administrative Assistant, San Francisco Redevelopment Agency, March 29, 1983.

(f) Ibid. If the parking is not privately owned, it would be operated under the terms of a long-term lease. In the latter case, property taxes would be levied on the possessory interest in the parking. The effect on property taxes would be the same in either case.

(g) Estimate by Recht Hausrath & Associates, based on information provided by Bob Engle, Conrad Associates, telephone conversation with Recht Hausrath & Associates, March 28, 1983. The estimate represents an average value for a multi-story parking structure.

(h) Estimate by Recht Hausrath & Associates, based on the results of the real estate analysis conducted for this study (see Section B, Environmental Impacts, and Appendix G). The weighted average values include the value of housing units built by contributions to the City housing fund.

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

(i) Refer to Section B, Environmental Impacts, and Appendix G for more information. The forecasts assumed that the assessed value of space added over the entire 1990-2000 period would average 2.5 percent higher with Alternative 3 (one-half of 5 percent), and average 7.5 percent higher with Alternatives 4 and 5 (one-half of 15 percent).

(j) This assumption could result in an underestimate of the change in assessed value to the extent that newly-constructed space experiences property turnover.

(k) This can be illustrated by the following equation:

$$\frac{1.02}{1.08} = .944 - 1 = -.056$$

If the average annual rate of inflation is higher than 8 percent between 1984 and 2000, the annual decline in real assessed value will be greater than assumed here. If the average rate of inflation is lower than 8 percent per year, the decline in real assessed value will be less.

(l) Estimate by Recht Hausrath & Associates, based on the real estate analysis conducted for this study.

(m) Based on a sample of 170 properties in the C-3 District. The 1982-83 assessed value of each property (from the records of the Assessor's Office, City and County of San Francisco) was divided by the amount of space for each property (as identified by the Downtown EIR Land Use Inventory) to compute the assessed value per sq. ft. of space. The survey excluded properties with recent construction.

(n) Based on the sales transactions for property in the C-3 District sold between July 1, 1980 and June 30, 1982, the average turnover rate for all property was once every 39 years. The average turnover rate for office buildings sold during this period was once every 46 years, and the average turnover rate for commercial stores was once every 32 years. Information on sales transactions of property in the C-3 District was obtained from the records of the Assessor's Office, City and County of San Francisco.

(o) Estimate by Recht Hausrath & Associates, based on a comparison of the average assessed value of existing buildings in the C-3 District and the recorded sales price of buildings sold between July 1, 1980 and June 30, 1982 (from the records of the Assessor's Office, City and County of San Francisco).

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

(p) This can be illustrated by the following equation:

$$\frac{39}{40} \times \frac{1.02}{1.08} + 2 \times \frac{1}{40} = .97 - 1.0 = -.03$$

(q) Secured property is considered to be property on which the payment of taxes can be secured, or guaranteed, by a lien on the property. Secured property includes land, improvements (such as buildings), and fixed personal property.

(r) Unsecured property is property on which the payment of taxes cannot be secured by a lien on the property. Unsecured property includes business equipment (such as office machines and furniture), fixtures (such as retail store displays), and non-permanent interior building improvements paid for by tenants.

(s) Estimate by Recht Hausrath & Associates. Since information was not available on the assessed value of unsecured property in the C-3 District or on the assessed value of unsecured property by different types of space (such as office, retail, and hotel), this estimate was derived from data on citywide assessed value. It was assumed that the secured property with the most potential for containing taxable unsecured property would be all classes of property except housing (but including resident hotels), parking, vacant property, and property likely to be exempt from taxation (such as schools, hospitals, public buildings, and churches). The assessed value of unsecured property citywide in 1982-83 was divided by the assessed value of the secured property citywide with the most potential for containing unsecured property to compute the percentage that the unsecured property represented of the secured property. This was about 33 percent. Then, the assessed value of the secured property in the C-3 District with the most potential for containing unsecured property (using the same criteria applied to citywide secured assessed value) was multiplied by .33 to estimate the amount of unsecured assessed value for property in the District in 1982-83. This figure was divided by the amount of space in the C-3 District with the most potential for containing unsecured property (again, using the same criteria applied above) to estimate the average unsecured assessed value per sq. ft. This resulted in the estimate of $18 per sq. ft.

TABLE L.5: METHODOLOGY FOR FORECASTING C-3 DISTRICT PROPERTY TAX REVENUES (Continued)

(t) Based on the main program alternative of the Yerba Buena Center Redevelopment Plan, and a telephone conversation between Recht Hausrath & Associates and Kathy Wiles, Senior Administrative Assistant, San Francisco Redevelopment Agency, March 29, 1983.

(u) Unsecured property is not subject to the 2 percent annual limitation on increases in assessed value. Unsecured property is assessed each year according to its market value adjusted by a depreciation schedule. For this analysis, it was assumed that value lost through depreciation would be offset by new purchases so that the overall value per sq. ft. would remain constant in real terms. It was assumed that, on average, the per sq. ft. value of unsecured property in the C-3 District would remain constant in 1982 dollars.

(v) Property taxes were assumed to be one percent of assessed value. This tax rate excludes property taxes levied to retire voter-approved bonded indebtedness.

(w) The 1982-83 property tax distribution among taxing jurisdictions is based on information provided by John Madden, Accountant, Controller's Office, City and County of San Francisco, telephone conversation with Recht Hausrath & Associates, March 23, 1983.

SOURCE: Recht Hausrath & Associates

TABLE L.6: ADDITIONAL ASSESSED VALUE IN C-3 DISTRICT IN 1990 AND 2000, DUE TO SPACE ADDED AND REMOVED 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

Property	Additional Assessed Value in 1990 From Change In Space 1984-1990	Additional Assessed Value In 2000 From Change In Space 1990-2000, by Alternative				
		1	2	3	4	5
Secured Property	$2,318.8	$2,921.3	$2,966.8	$2,498.0	$1,996.7	$1,738.9
Unsecured Property	204.9	327.2	301.9	255.9	173.3	162.4
Total Property	$2,523.7	$3,248.4	$3,268.7	$2,753.8	$2,170.0	$1,901.3

NOTE: Figures may not add to total due to independent rounding.

(a) This table shows additional assessed value in 1990 from space added and removed in the C-3 District between 1984 and 1990, and the additional assessed value in 2000, by Alternative, from space added and removed between 1990-2000. The figures for 2000 do not include the additional assessed value from changes in space during the 1984-1990 period. The total additional assessed value in 2000 from changes in space during 1984-1990 and 1990-2000 are shown in Table L.7. For a description of the forecasting methodology, refer to Table L.5.

SOURCE: Recht Hausrath & Associates

TABLE L.7: ADDITIONAL ASSESSED VALUE IN C-3 DISTRICT IN 2000, DUE TO SPACE ADDED AND REMOVED DURING 1984-2000 (Millions of 1982 Dollars) (a)

Property	Additional Assessed Value In 2000 From Change In Space 1984-2000, by Alternative (b)				
	1	2	3	4	5
Secured Property	$4,230.5	$4,276.1	$3,807.3	$3,305.9	$3,048.2
Unsecured Property	532.1	506.8	460.8	378.2	367.3
Total Property	$4,762.6	$4,782.9	$4,268.0	$3,684.2	$3,415.5

NOTE: Figures may not add to totals due to independent rounding.

(a) This table shows additional assessed value in 2000, by Alternative, from space added and removed in the C-3 District between 1984 and 2000. Additional assessed value in 1990 from changes in space that occur during 1984-1990, and additional assessed value in 2000 from changes in space that occur during 1990-2000, are shown in Table L.6. For a description of the forecasting methodology, refer to Table L.5.

(b) The figures in this table are not the simple sum of the 1990 and 2000 figures from the previous table (Table L.6). Since the secured assessed value of space added during the 1984-1990 period would decline in real value after it is added to the assessment roll (based on the assumptions discussed in Table L.5), the assessed value of this space in 2000 would be less than its assessed value in 1990 (in 1982 dollars).

SOURCE: Recht Hausrath & Associates

TABLE L.8: DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 1990 AND IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Recipients Of Property Tax Revenues (b)	Additional Property Tax Revenue In 1990 From Change In Assessed Value 1984-1990	Additional Property Tax Revenue in 2000 From Change In Assessed Value 1990-2000, By Alternative				
		1	2	3	4	5
City and County Of San Francisco	$22,062	$28,397	$28,574	$24,073	$18,970	$16,621
Open Space Fund	631	812	817	689	543	475
County Superintendent Of Schools	24	32	32	27	21	18
San Francisco Unified School District	1,943	2,501	2,517	2,120	1,671	1,464
San Francisco Community College District	364	469	472	398	313	275
Bay Area Air Quality Management District	53	68	68	57	45	40
BART	160	205	207	174	137	120
Total All Recipients (c)	$25,237	$32,484	$32,687	$27,538	$21,700	$19,013

TABLE L.8: DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 1990 AND IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-1990 AND 1990-200 (Thousands of 1982 Dollars) (a) (Continued)

(a) This table shows additional property tax revenues in 1990 from changes in assessed value in the C-3 District due to space added and removed between 1984 and 1990, and the additional property tax revenues in 2000, by Alternative, from changes in assessed value due to space added and removed between 1990 and 2000. The figures for 2000 do not include the tax revenues from the assessed value of space added and removed during the 1984-1990 period. The total additional tax revenues in 2000 from increased assessed value due to space added and removed during 1984-1990 and 1990-2000 are shown in Table L.9. For a description of the forecasting methodology, refer to Table L.5. This total excludes the tax revenues from changes in the assessed value of existing space in the C-3 District (except for space that is demolished or converted to office use).

(b) The distribution of property tax revenues among taxing jurisdictions was based on the distribution formula in effect in 1982-83.

(c) The total property tax revenue is equivalent to one percent of the change in assessed value of secured and unsecured property. It excludes property taxes levied to retire voter-approved bonded indebtedness.

SOURCE: Recht Hausrath & Associates

TABLE L.9: DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-2000 (Thousands of 1982 Dollars) (a)

Recipients Of Property Tax Revenues (c)	Additional Property Tax Revenue in 2000 From Change In Assessed Value 1990-2000, By Alternative (b)				
	1	2	3	4	5
City and County Of San Francisco	$41,634	$41,811	$37,310	$32,207	$29,858
Open Space Fund	1,191	1,196	1,067	921	854
County Superintendent Of Schools	46	47	42	36	33
San Francisco Unified School District	3,667	3,682	3,286	2,836	2,630
San Francisco Community College District	688	691	616	532	493
Bay Area Air Quality Management District	99	100	89	77	71
BART	301	302	270	233	216
Total All Recipients (d)	$47,626	$47,829	$42,680	$36,842	$34,155

TABLE L.9: DISTRIBUTION OF ADDITIONAL PROPERTY TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN ASSESSED VALUE 1984-2000 (Thousands of 1982 Dollars) (a) (Continued)

(a) This table shows additional property tax revenues in 2000, by Alternative, from changes in assessed value in the C-3 District due to space added and removed between 1984 and 2000. Additional tax revenues in 1990 from increased assessed value due to space added and removed during 1984-1990, and additional property tax revenues in 2000 from increased assessed value due to space added and removed during 1990-2000, are shown in Table L.8. For a description of the forecasting methodology, refer to Table L.5. This table excludes the tax revenues from changes in the assessed value of existing space in the C-3 District (except for space that is demolished or converted to office use).

(b) The figures in this table are not the simple sum of the 1990 and 2000 figures from the previous table (Table L.8). Since the secured assessed value of space added during the 1984-1990 period would decline in real value after it is added to the assessment roll (based on the assumptions discussed in Table L.5) the assessed value of this space in 2000 would be less than its assessed value in 1990 (in 1982 dollars). Thus, the property taxes revenues from the space added during 1984-1990 would be less in 2000 than in 1990.

(c) The distribution of property tax revenues among taxing jurisdictions was based on the distribution formula in effect in 1982-83.

(d) The total property tax revenue is equivalent to one percent of the change in assessed value of secured and unsecured property. It excludes property taxes levied to retire voter-approved bonded indebtedness.

SOURCE: Recht Hausrath & Associates

TABLE L.10: METHODOLOGY FOR FORECASTING PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT

The forecasts were based on the relationship between payroll/business tax collections from businesses in the C-3 District and estimated C-3 District employment. To calculate this relationship, a correspondence was established between the business classifications defined for payroll/business tax purposes and the business activities defined for this study. The correspondence chart appears in Table L.11.

Some business activities are exempt from the payroll and business tax. These include banks, insurance companies, and insurance agents; government, non-profit, charitable, and educational activities; and small businesses whose computed tax is less than $2,500.

1) All Businesses Except Hotels and Construction

The following groups were defined in order to establish the 1981 relationship between C-3 District revenues and C-3 District employment and to complete the forecasts of C-3 District revenues for 1984, 1990, and 2000 for five Alternatives:

- General Office and Services - most office functions, including headquarters, business and professional services, and retail services.
- Transportation, Communications and Utilities - office establishments in this sector, also including transporting persons for hire (taxi), trucking, and storage/freight - forwarding.
- Finance and Sales - non-exempt portions of banking and insurance office activities, in addition to wholesalers, import-export firms, and commission brokers.
- Retail - retail stores and restaurants.

Because of the predominance of banking and insurance companies, about 60 percent of the citywide employment in finance, insurance and real estate (FIRE) is estimated to be exempt from payroll and business taxes, based on analysis of County Business Patterns data for the entire city (1977-1980) and state data for the entire city, presented in Employment and Payrolls, 1977. C-3 District employment in FIRE is grouped in two functions for this study: executive/administrative and information processing/administration. The information processing/ administrative function, typically part of large banking and insurance companies, was assumed to be exempt. For the balance of FIRE employment (executive and other headquarters functions), it was assumed that 60 percent was exempt for purposes of the payroll/- business tax calculations.

TABLE L.10: METHODOLOGY FOR FORECASTING PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT (Continued)

The forecast of tax revenues consisted of the following steps:

- Calculate 1981 C-3 District tax collections per C-3 District employee for each group: (a)

Classification	Tax Per Employee (b) (1982 Dollars)
General Office and Services	$297
Transportation, Communications and Utilities	347
Finance and Sales	303
Retail	201

- Multiply this ratio by forecast employment in each group in 1984, 1990, and 2000 for five Alternatives.
- Subtract 1984 revenues from revenues for 1990 and 2000 to compute revenues attributable to additional business activity in C-3 District.

2) Hotels

- Not all C-3 District hotels generate receipts greater than the business/payroll tax threshold for the small business exemption. 1981 C-3 District collections represent revenues from about 40 hotels. (c) 1981 tax revenues per employee were estimated for a group of hotels assumed to represent those with the highest annual receipts.
- Estimate number of rooms in about 40 C-3 District hotels having most potential receipts, as measured by number of rooms multiplied by average room rate, per San Francisco Lodging Guide, 1982 (d)
- Calculate estimated employment in these hotels, using average of 0.74 employees per room in C-3 District hotels (see Appendix H, Table H.2).

TABLE L.10: METHODOLOGY FOR FORECASTING PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT (Continued)

- Calculate 1981 C-3 District tax collections per hotel employee in this group of hotels. In 1982 dollars, this amount was $165. (e)

- Assuming all new hotels will pay taxes comparable to the average calculated for 1981 and that no existing hotels other than the group identified in 1981 will exceed the small business exemption in the future, calculate future tax revenues from C-3 District hotels. (f) Multiply 1981 C-3 District tax collections per employee by C-3 District hotel employment (1981 base calculated in Step #2, above, plus forecast growth in 1984, 1990, and 2000 for five Alternatives).

- Subtract 1984 revenues from revenues for 1990 and 2000 to compute revenues attributable to additional business activity in C-3 District.

3) Construction

- Revenues in the construction category are calculated based on total annual payroll attributable to C-3 District construction activity. See Appendix H, for more detail on construction employment and payrolls.

- Payroll tax forecasts in this category are attributable to the location of the construction activity, not the contractors' offices.

- Use estimates of wages and salaries for construction workers and project management employees prepared for this study, excluding construction employment associated with the upgrading of existing space. (g) (See Table V.C.11, Employment Impacts.)

- Calculate total annual payroll for C-3 District projects by multiplying average annual wage for both high wage (skilled crafts and managerial), and low wage (clerical) employees by average annual person-years in 1990 and 2000 for five Alternatives.

- Calculate annual payroll tax revenue at 1.5 percent of annual payroll, 1990, and 2000 for five Alternatives.

4) Total payroll/business tax revenues from the C-3 District for each forecast year/Alternative is the sum of the revenues calculated for each group, as described above.

TABLE L.10: METHODOLOGY FOR FORECASTING PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT (Continued)

NOTES:

(a) The data include only those tax collections from businesses that paid more than $2,500 in annual payroll or business taxes. This was done to account for the change in the small business exemption, effective January 1, 1982, that exempts taxpayers whose computed tax is $2,500 or less. During 1981, the small business exemption was lower, allowing only businesses whose computed tax was $500 or less to be exempt. Adjusting the data to reflect the higher exemption level allowed the calculation of the ratio of tax collections to employment to be consistent with existing City tax ordinances and thus more representative of the current relationship between tax revenues and employment.

(b) The payroll and business tax collections from businesses in the C-3 District were obtained from the Tax Collector's Office, City and County of San Francisco. The estimates of C-3 District employment are based on those shown in Appendix H. The use of these ratios for future years assumes that the tax collection per employee remains constant and the proportions of exempt employment in each business classification remains constant.

(c) Tabulations of payroll/business tax collections from the C-3 District prepared by the Tax Collector's Office show records from 37 establishments in the hotel classification.

(d) The estimate for 1981 is 11,750 rooms.

(e) Based on payroll and business tax collections from hotels in the C-3 District that paid more than $2,500 in taxes in 1981, from information provided by the Tax Collector's Office, City and County of San Francisco.

(f) The methodology does not account for the upgrading of existing hotels. Some upgrading is forecast to occur. Upgrading refers to renovation of existing facilities and increased employment in existing facilities, supported by increased room rates. Thus, upgrading would probably result in increased receipts from some existing hotels. The amount is not large enough to quantify for the payroll/business tax forecasts, however.

(g) Construction employment associated with upgrading existing space was excluded to isolate the effect of new construction and conversions on construction employment, and thus identify the effect of the Alternatives on additional payroll/business tax revenues due to space added or converted in the C-3 District between 1984 and 2000.

SOURCE: Recht Hausrath & Associates

TABLE L.11: PAYROLL/BUSINESS TAX COLLECTIONS IN C-3 DISTRICT: CORRESPONDENCE BETWEEN BUSINESS CLASSIFICATIONS AND BUSINESS ACTIVITIES (a)

Business Classification (b)	Business Activity (c)
General Office and Services	
(00) Fixed Place of Business (06) Personal Property Rental (07) Other Businesses (15) Architects and Engineers	Manufacturing and Mining, Business and Professional Services, Retail Services
Transportation, Communications and Utilities	
(09) Storage, Freight Forwarding (10) Telephone, Gas, Electric, Steam, Railroad Services (11) Transporting Persons for Hire (12) Trucking - Hauling	Transportation, Communications, and Utilities
Finance and Sales	
(01) Commission Merchant or Broker (05) Lending Money, etc. (13) Wholesale Sales	Finance, Insurance, Real Estate (40 percent of executive/administrative functions), Wholesale and Manufacturing Sales
Hotels	
(03) Hotel, Apartments, etc.	Transient Hotels (d)
Retail	
(08) Retail Sales	Retail Trade
Construction	
(02) Contractors	Construction
Exempt	
Banks Insurance Companies and agents Non-profit organizations Government Businesses whose computed tax is $2,500 or less (small business exemption)	Finance, Insurance, Real Estate (all information processing functions plus 60 percent of executive/administrative functions), Cultural, Institutional, Educational, Government

TABLE L.11: PAYROLL/BUSINESS TAX COLLECTIONS IN C-3 DISTRICT: CORRESPONDENCE BETWEEN BUSINESS CLASSIFICATIONS AND BUSINESS ACTIVITIES (Continued)

NOTES:

(a) Some business classifications and business activities are not covered in this correspondence chart. Recorded tax collections for the C-3 District from business classification 04, Laundry, Cleaning and Dyeing, were too small in 1981 to incorporate into the forecasts. Parking activity is not included on the correspondence chart because collections depend on the organizational status of the parking facilities, whether they are privately owned and operated, or run by the City's non-profit garage corporations. Industrial, warehouse and automotive activities in the C-3 District are assumed to be covered by the small business exemption. Building maintenance/security activities are assumed to be generally based outside of the C-3 District; therefore receipts due to increased C-3 District employment would not be associated with a C-3 location.

(b) Business classifications and codes are defined in Ordinance Sections 1004.00 - 1004.16, and listed in a summary brochure of Payroll Expense Tax and Business Tax Ordinances, prepared by San Francisco Tax Collector's office.

(c) Business activities are defined for the analysis of C-3 District economic activity. (See Appendix H, Table H.1.)

(d) Residential hotels and apartments in the C-3 District are assumed not to generate the minimum gross receipts/payroll required for tax liability under the small business exemption.

SOURCE: Recht Hausrath & Associates

TABLE L.12: ADDITIONAL PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN EMPLOYMENT 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

	Additional Tax Revenue in 1990 From Change In Employment 1984-1990	Additional Tax Revenues In 2000 From Change In Employment 1990-2000, by Alternative				
		1	2	3	4	5
General Office and Services	$ 6,224	$ 9,380	$ 8,927	$ 8,395	$ 7,265	$ 7,391
TCU	711	1,453	1,353	1,250	660	729
Finance and Sales	1,624	2,928	2,790	2,662	2,240	2,321
Hotels	411	700	700	700	641	641
Retail Sales	436	737	722	621	529	535
Contractors	1,500	1,749	1,731	1,713	1,665	1,665
Total All Groups	$10,906	$16,947	$16,223	$15,341	$13,000	$13,282

(a) This table shows additional payroll/business taxes in 1990 from changes in employment in the C-3 District that occur between 1984 and 1990, and the additional payroll/business taxes in 2000, by Alternative, from changes in employment that occur between 1990 and 2000. The figures for 2000 do not include the payroll/business tax revenue from changes in employment during the 1984-1990 period. The total additional payroll/business taxes in 2000 from increased employment during 1984-1990 and 1990-2000 are shown in Table L.13. For a description of the forecasting methodology, refer to Table L.10.

SOURCE: Recht Hausrath & Associates

TABLE L.13: ADDITIONAL PAYROLL/BUSINESS TAX REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN EMPLOYMENT 1984-2000 (Thousands of 1982 Dollars) (a)

	Additional Tax Revenues In 2000 From Change In Employment 1984-2000, by Alternative				
	1	2	3	4	5
General Office and Services	$15,604	$15,151	$14,619	$13,489	$13,615
TCU	2,164	2,064	1,961	1,371	1,440
Finance and Sales	4,552	4,414	4,286	3,864	3,945
Hotels	1,111	1,111	1,111	1,052	1,052
Retail Sales	1,173	1,158	1,057	965	971
Contractors	3,249	3,231	3,213	3,165	3,165
Total All Groups	$27,853	$27,129	$26,247	$23,906	$24,188

(a) This table shows additional payroll/business taxes in 2000, by Alternative, from changes in employment in the C-3 District that occur between 1984 and 2000. Additional payroll/business taxes in 1990 from increased employment that occurs during 1984-1990, and additional payroll/business taxes in 2000 from increased employment that occurs during 1990-2000, are shown in Table L.12. For a description of the forecasting methodology, refer to Table L.10.

SOURCE: Recht Hausrath & Associates

TABLE L.14: METHODOLOGY FOR FORECASTING C-3 DISTRICT TAXABLE TRANSACTIONS AND SALES TAX REVENUE

There are three components of the forecast: taxable retail sales, taxable transactions from business and personal services, and taxable transactions from all other outlets. The methodology for each component is outlined below.

1) Taxable Retail Sales:

- Forecasts of C-3 District retail sales were prepared for this study. Appendix H provides background on this analysis.
- The share of C-3 District retail sales that are taxable is assumed to remain constant over time. See Table L.2 for more detail establishing these assumptions for the 1981 estimates.
- Calculate taxable retail sales in 1984, 1990, and 2000 for five Alternatives by multiplying taxable share by forecast sales.

2) Business and Personal Services:

- Calculate 1981 taxable transactions estimated for C-3 District per 1981 C-3 District employment for two groups: hotels and retail services. See Table L.2 for more detail on 1981 estimates of taxable transactions in these categories.
- The estimated taxable transactions per employee are assumed to remain constant over time.
- Calculate taxable transactions in 1984, 1990, and 2000 for five Alternatives by multiplying estimated transactions per employee by forecast employment. See Appendix H for baseline employment forecasts and Table V.C.2 in Employment Impacts for the Alternative forecasts of employment.

3) All Other Outlets:

- For all except construction, calculate 1981 taxable transactions estimated for C-3 District per 1981 C-3 District employment in the following business activities (aggregated):
  - all Primary Office, except Government
  - all Secondary Office, except Retail Services
  - Cultural/Institutional/Educational
  - Industrial/Warehouse/Automotive/Parking

TABLE L.14: METHODOLOGY FOR FORECASTING C-3 DISTRICT TAXABLE TRANSACTIONS AND SALES TAX REVENUE (Continued)

See Table L.2 for more detail on 1981 estimates of taxable transactions for all other outlets in the C-3 District.

- The estimated taxable transactions per employee are assumed to remain constant over time.

- Calculate taxable transactions in 1984, 1990, and 2000 for five Alternatives by multiplying estimated transactions per employee by forecast employment. See Appendix H for baseline employment forecasts and Table V.C.2 in Employment Impacts for the Alternative forecasts.

- For construction, calculate 1981 taxable transactions estimated for C-3 District per 1981 C-3 construction employment (person-years). See Table L.2 for discussion of 1981 taxable transactions from C-3 District construction activity and Appendix H for discussion for 1981 estimates of construction employment in terms of person-years.

- The estimated taxable transactions per person-year are assumed to remain constant over time.

- Calculate taxable transactions in 1984, 1990, and 2000 for five Alternatives by multiplying taxable transactions per person-year by forecast person-years. See Table H.16 for construction employment forecasts by time period and Alternatives

- Sum taxable transactions for construction and all others to calculate total taxable transactions from all other outlets.

4) Total Taxable Transactions:

- Calculate total taxable transactions for C-3 District in 1984, 1990, and 2000 for five Alternatives by adding transactions forecast from each of these sources.

- Subtract 1984 revenues from revenues in 1990 and 2000 to compute additional revenues in 1990 and 2000 attributable to additional activity in C-3 District.

5) Total Sales Tax Revenue:

- Calculate share of C-3 District sales tax revenue for City's general fund at one percent of additional taxable transactions in 1990, and 2000 for five Alternatives. (a)

TABLE L.14: METHODOLOGY FOR FORECASTING C-3 DISTRICT TAXABLE TRANSACTIONS AND SALES TAX REVENUE (Continued)

- Calculate share of C-3 District sales tax revenue for Muni at .2175 percent of additional taxable transactions in 1990, and 2000 for all Alternatives.(b)

NOTES:

(a) The City receives 1 cent of the total sales tax rate of 6.5 cents per dollar of taxable transactions that occur in the City. The revenues from this portion of the sales tax go to the City's general fund.

(b) A portion of the 6.5 cent sales tax is allocated to county transit operations, as authorized by the state Transportation Development Act (TDA). The rate is .25 cents per dollar of taxable transactions. The TDA revenues generated in each Bay Area county are allocated among individual transit and transportation purposes by the Metropolitan Transportation Commission (MTC). Of the total TDA revenues generated by sales in San Francisco, currently about 87 percent are allocated to Muni. The remainder is shared by MTC (for planning purposes and for administering the TDA revenues), Golden Gate Transit and Caltrans. The forecast assumes that Muni will continue to receive about 87 percent of the TDA revenues from sales in the City (or .2175 percent of total taxable transactions).

SOURCE: Recht Hausrath & Associates

TABLE L.15: ADDITIONAL TAXABLE SALES IN C-3 DISTRICT IN 1990 and 2000, DUE TO CHANGE IN SALES 1984-1990 AND 1990-2000 (Millions of 1982 Dollars) (a)

Source Of Taxable Sales	Additional Taxable Sales in 1990, From Change In Sales, 1984-1990	Additional Taxable Sales in 2000, From Change In Sales, 1990-2000, by Alternative				
		1	2	3	4	5
Retail Stores	$191.2	$339.0	$334.9	$329.9	$303.7	$305.1
Business and Professional Services	28.9	51.3	49.6	48.2	39.9	42.6
All Other Outlets	117.7	174.6	164.1	146.3	101.7	102.9
Total, All Sources	$337.8	$564.9	$548.6	$524.4	$445.3	$450.6

(a) This table shows additional taxable sales in 1990 from changes in business activity in the C-3 District that occur between 1984 and 1990, and the additional taxable sales in 2000, by Alternative, from changes in business activity that occur between 1990 and 2000. The figures for 2000 do not include the sales from increased business activity during the 1984-1990 period. The total additional sales in 2000 from increased activity during 1984-1990 and 1990-2000 are shown in Table L.16. For a description of the forecasting methodology, refer to Table L.14.

SOURCE: Recht Hausrath & Associates

TABLE L.16: ADDITIONAL TAXABLE SALES IN C-3 DISTRICT IN 2000, DUE TO CHANGES IN SALES 1984-2000 (Millions of 1982 Dollars) (a)

Source Of Taxable Sales	Additional Taxable Sales in 2000, From Change In Sales, 1984-2000, by Alternative				
	1	2	3	4	5
Retail Stores	$530.2	$526.1	$521.1	$494.9	$496.3
Business and Professional Services	80.2	78.5	77.1	68.8	71.5
All Other Outlets	292.3	281.8	264.0	219.4	220.6
Total, All Sources	$902.7	$886.4	$862.2	$783.1	$788.4

(a) This table shows additional taxable sales in 2000 by Alternative, from changes in business activity in the C-3 District that occur between 1984 and 2000. Additional sales in 1990 from increased business activity that occurs during 1984-1990, and additional sales in 2000 from increased business activity that occurs during 1990-200, are shown in Table L.15. For a description of the forecasting methodology, refer to Table L.14.

SOURCE: Recht Hausrath & Associates

TABLE L.17: ADDITIONAL CITY SALES TAX REVENUES IN 1990 AND 2000, DUE TO CHANGE IN TAXABLE SALES IN C-3 DISTRICT, 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

City Sales Tax Fund	Additional Tax Revenue In 1990 From Change In Sales, 1984-1990	Additional Tax Revenues In 2000 From Change In Sales, 1990-2000, by Alternative				
		1	2	3	4	5
General Fund (b)	$3,378	$5,649	$5,486	$5,244	$4,453	$4,506
TDA Revenues For Muni (c)	735	1,229	1,193	1,141	969	980
Total Sales Tax Revenues	$4,113	$6,878	$6,679	$6,385	$5,422	$5,486

(a) This table shows additional sales tax revenues in 1990 from changes in taxable sales in the C-3 District that occur between 1984 and 1990, and the additional sales tax revenues in 2000, by Alternatives, from changes in taxable sales that occur between 1990 and 2000. The figures for 2000 do not include the tax revenues from increased taxable sales during the 1984-1990 period. The total additional tax revenues in 2000 from increased taxable sales during 1984-1990 and 1990-2000 are shown Table L.18. For a description of the forecasting methodology, refer in Table L.14.

(b) The City receives 1 cent of the total sales tax rate of 6.5 cents per dollar of taxable transactions that occur in the City. The revenues from this portion of the sales tax go to the City's general fund.

(c) A portion of the 6.5 cent sales tax is allocated to county transit operations, as authorized by the state Transportation Development Act (TDA). The rate is .25 cents per dollar of taxable transactions. The TDA revenues generated in each Bay Area county are allocated among individual transit and transportation purposes by the Metropolitan Transportation Commission (MTC). Of the total TDA revenues generated by sales in San Francisco, currently about 87 percent are allocated to Muni. The remainder is shared by MTC (for planning purposes and for administering the TDA revenues), Golden Gate Transit and Caltrans. The forecast assumes that Muni will continue to receive about 87 percent of the TDA revenues from sales in the City.

SOURCE: Recht Hausrath & Associates

TABLE L.18: ADDITIONAL CITY SALES TAX REVENUES IN 2000, DUE TO CHANGE IN TAXABLE SALES IN C-3 DISTRICT, 1984-2000 (Thousands of 1982 Dollars) (a)

City Sales Tax Fund	Additional Tax Revenues in 2000, From Change In Sales, 1984-2000, by Alternative				
	1	2	3	4	5
General Fund (b)	$9,027	$8,864	$8,622	$7,831	$7,884
TDA Revenues For Muni (c)	1,963	1,928	1,875	1,703	1,715
Total Sales Tax Revenues	$10,990	$10,792	$10,497	$9,534	$9,599

(a) The table shows additional sales tax revenues in 2000, by Alternative, from changes in taxable sales in the C-3 District that occur between 1984 and 2000. Additional tax revenues in 1990 from increased taxable sales that occur during 1984-1990, and additional tax revenues to 2000 from increased taxable sales that occur during 1990-2000, are shown in Table L.17. For a description of the forecasting methodology, refer to Table L.14.

(b) The City receives 1 cent of the total sales tax rate of 6.5 cents per dollar of taxable transactions that occur in the City. The revenues from this portion of the sales tax go to the City's general fund.

(c) A portion of the 6.5 cent sales tax is allocated to county transit operations, as authorized by the State Transportation Development Act (TDA). The rate is .25 cents per dollar of taxable transactions. The TDA revenues generated in each Bay Area county are allocated among individual transit and transportation purposes by the Metropolitan Transportation Commission (MTC). Of the total TDA revenues generated by sales in San Francisco, currently about 87 percent are allocated to Muni. The remainder is shared by MTC (for planning purposes and for administering the TDA revenues), Golden Gate Transit and Caltrans. The forecast assumes that Muni will continue to receive about 87 percent of the TDA revenues from sales in the City.

SOURCE: Recht Hausrath & Associates

TABLE L.19: METHODOLOGY FOR FORECASTING HOTEL TAX REVENUES FROM FUTURE C-3 DISTRICT HOTEL DEVELOPMENT

Forecasts of hotel rooms added in the C-3 District between 1981 and 2000 were prepared for this study. The forecasts, in terms of both number of hotel rooms and number of hotel employees, accounted for hotel projects under construction, approved, under formal review and in Yerba Buena Center, and considered growth in tourist and convention activity, as well as suitable hotel locations in the C-3 District and competitive areas. Appendix H, Employment Analysis, describes the key demand factors in the hotel forecasts. Appendix G, Land Use and Real Estate Development Analysis, provides background on how the Alternatives affect hotel development in the C-3 District.

Assumptions for Calculation of Hotel Tax Revenues from New C-3 District Hotels (a):

- Due to the large number of hotel projects in the pipeline, market absorption of some new rooms built in the 1984-1990 period would not occur until after 1990. It is assumed that 1,500 rooms built in the 1984-1990 period would not be occupied (at the average year-round occupancy rate for C-3 District hotels) until after 1990.
- Average year-round occupancy rate: 70 percent (b)
- Average room rate: $90 per night (c)

Methodology for Calculation of Hotel Tax Revenues from New C-3 District Hotels:

[Number of new hotel rooms built and absorbed: 1984-1990, 1990-2000 for five Alternatives] x [70% year-round occupancy rate] x [$90/night] x [365 nights/year] x [9.75% hotel tax rate]

= Annual additional hotel tax revenues generated by new C-3 District hotels in 1990, and 2000 for five Alternatives.

Distribution of Hotel Tax Revenues Between General Fund and Hotel Tax Fund

The revenues from the hotel tax are shared by the City's general fund and hotel tax fund. The distribution of tax revenues between the general and hotel tax funds is controlled by City ordinance.(d) It was assumed that the distribution in effect over the 1984-2000 period would

TABLE L.19: METHODOLOGY FOR FORECASTING HOTEL TAX REVENUES FROM FUTURE C-3 DISTRICT HOTEL DEVELOPMENT (Continued)

result in the general fund receiving 32 percent of total tax revenues and the hotel tax fund receiving 68 percent of total tax revenues. This assumption was established by the following reasoning:(e)

- Of the total 9.75 percent hotel tax rate, revenues from the equivalent of a 1.75 percent tax rate would be allocated to the general fund.
- Tax revenues from the remaining 8 percent tax rate would be allocated to the hotel tax fund. These revenues would be apportioned as follows:
  - 50 percent for lease payments and operating expenses for Moscone Center, and operating expenses of Brooks Hall and Civic Auditorium
  - 6.23 percent to facilitate the development of low-cost housing in Yerba Buena Center
  - 6.23 percent for debt service and improvements to Candlestick Park
  - 8.5 percent to the War Memorial Special Fund for maintaining and operating the War Memorial buildings
  - 12 percent for publicity and advertising purposes (generally, assistance for neighborhood arts programs)
  - the remainder (17.09 percent) to the general fund
- The total share for the general fund would be the sum of the 1.75 percent tax rate and the general fund's portion of the 8 percent tax rate for the hotel tax fund:

  general fund tax rate equivalent =

  $1.75 + (8 \times .17) = 3.11$ percent tax rate

  general fund share of total hotel tax rate =

  $\frac{3.11}{9.75} = 31.9$ percent

TABLE L.19: METHODOLOGY FOR FORECASTING HOTEL TAX REVENUES FROM FUTURE C-3 DISTRICT HOTEL DEVELOPMENT (Continued)

NOTES:

(a) Some upgrading of existing C-3 District hotel space is forecast to occur. Upgrading refers to renovation of existing facilities and increased employment in existing facilities, supported by increased room rates. This change in the revenue-generating capacity of some existing C-3 District hotels is not specifically accounted for in the hotel tax forecasts.

(b) This is the same average year-round occupancy rate assumed in 1981. It reflects a long-term average occupancy for all C-3 District hotels.

(c) The room rate for new hotel rooms is higher than the average room rate calculated for 1981. It is assumed that the average room rates for new C-3 District hotels would be higher, in real terms, than the overall average for existing C-3 hotels. The $90 per night room rate is the weighted average room rate for 37 first-class hotels located in the C-3 District, per San Francisco Convention and Visitors Bureau, San Francisco Lodging Guide, 1982.

(d) Ordinance 54-82.

(e) This distribution of the hotel tax revenues was considered the most reasonable for forecasting purposes. It excludes the current allocation from the hotel tax fund to the Convention Facilities Fund, since this subsidy is likely to end by the mid-1980's. It also excludes lump sum allocations from the hotel tax fund for low-cost housing and rent supplements, since these amounts ($200,000 per year in 1982-83, $100,000 per year thereafter) represent a very small percentage of the total hotel tax allocations (less than one percent in 1982-83). It is possible that the distributions shown could change in the future (when, for example, debt service for Candlestick Park is fully retired or the lease payments for Moscone Center are paid in full), but there was no basis for selecting an alternate allocation that would accurately reflect possible modifications to the tax distribution. (Assumptions by Recht Hausrath & Associates, based on telephone conversation with Bob Gamble, Assistant to Chief Administrative Officer, City and County of San Francisco, April 7, 1983.)

SOURCE: Recht Hausrath & Associates

TABLE L.20: ADDITIONAL C-3 DISTRICT HOTEL ROOM RECEIPTS IN 1990 AND 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

	Additional Room Receipts In 1990 From Change In Number Of Hotel Rooms 1984-1990	Additional Room Receipts In 2000 From Change In Number of Hotel Rooms 1990-2000, by Alternative				
		1	2	3	4	5
Hotel Room Receipts	$65,283	$124,863	$124,863	$124,863	$113,365	$113,365

(a) This table shows additional hotel room receipts in 1990 from changes in the number of transient hotel rooms in the C-3 District that occur between 1984 and 1990, and the additional room receipts in 2000, by Alternative, from changes in the number of transient hotel rooms that occur between 1990 and 2000. The figures for 2000 do not include the room receipts in 1990 from additional hotel rooms constructed during the 1984-1990 period. The total additional room receipts in 2000 from additional hotel rooms constructed during 1984-1990 and 1990-2000 are shown in Table L.21. For a description of the forecasting methodology, refer to Table L.19.

SOURCE: Recht Hausrath & Associates

TABLE L.21: ADDITIONAL C-3 DISTRICT HOTEL ROOM RECEIPTS IN 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-2000 (Thousands of 1982 Dollars) (a)

	Additional Room Revenues In 2000 From Change In Number of Hotel Rooms 1990-2000, by Alternative				
	1	2	3	4	5
Hotel Room Receipts	$190,146	$190,146	$190,146	$178,648	$178,748

(a) This table shows additional hotel room receipts in 2000, by Alternative, from changes in the number of transient hotel rooms in the C-3 District that occur between 1984 and 2000. Additional room receipts in 1990 from additional hotel rooms constructed during 1984-1990, and additional room receipts in 2000 from additional hotel rooms constructed during 1990-2000 are shown in Table L.20. For a description of the forecasting methodology, refer to Table L.19.

SOURCE: Recht Hausrath & Associates

TABLE L.22: ADDITIONAL HOTEL TAX REVENUES FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Recipient Of Hotel Tax Revenue	Additional Tax Revenues In 1990 From Change In Number of Hotel Rooms 1984-1990	Additional Tax Revenues in 2000 From Change In Number Of Hotel Rooms 1990-2000, By Alternative				
		1	2	3	4	5
General Fund (b)	$2,037	$ 3,896	$ 3,896	$ 3,896	$ 3,537	$ 3,537
Hotel Tax Fund (c)	4,328	8,278	8,278	8,278	7,516	7,516
Total Hotel Tax Revenues	$6,365	$12,174	$12,174	$12,174	$11,053	$11,053

(a) This table shows additional hotel tax revenues in 1990 from changes in the number of transient hotel rooms in the C-3 District that occur between 1984 and 1990, and the additional tax revenues in 2000, by Alternative, from changes in number of hotel rooms that occur between 1990 and 2000. The figures for 2000 do not include the tax revenues from hotel rooms added during the 1984-1990 period. The total additional tax revenues in 2000 from hotel rooms added during 1984-1990 and 1990-2000 are shown in Table L.23. For a description of the forecasting methodology, refer to Table L.19.

(b) Assumes the City's general fund would receive about 32 percent of total hotel tax revenues. The remainder would be allocated to the hotel tax fund. See Table L.19 for an explanation of the assumption.

(c) Assumes the City's hotel tax fund would receive about 68 percent of the hotel tax revenues. The remainder would be allocated to the general fund. See Table L.19 for an explanation of the assumption.

SOURCE: Recht Hausrath & Associates

TABLE L.23: ADDITIONAL HOTEL TAX REVENUES FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN THE NUMBER OF TRANSIENT HOTEL ROOMS 1984-2000 (Thousands of 1982 Dollars) (a)

Recipient Of Hotel Tax Revenue	Additional Tax Revenues in 2000 From Change In Number Of Hotel Rooms 1984-2000, By Alternative				
	1	2	3	4	5
General Fund (b)	$ 5,933	$ 5,933	$ 5,933	$ 5,574	$ 5,574
Hotel Tax Fund (c)	12,606	12,606	12,606	11,844	11,844
Total Hotel Tax Revenues	$18,539	$18,539	$18,539	$17,418	$17,418

(a) This table shows additional hotel tax revenues in 2000 by Alternative, from changes in the number of transient hotel rooms in the C-3 District that occur between 1984 and 2000. Additional tax revenues in 1990 from hotel rooms added during 1984-1990, and additional tax revenues in 2000 from hotel rooms added during 1990-2000, are shown in Table L.22. For a description of the forecasting methodology, refer to Table L.19.

(b) Assumes the City's general fund would receive about 32 percent of total hotel tax revenues. The remainder would be allocated to the hotel tax fund. See Table L.19 for an explanation of the assumption.

(c) Assumes the City's hotel tax fund would receive about 68 percent of the hotel tax revenues. The remainder would be allocated to the general fund. See Table L.19 for an explanation of the assumption.

SOURCE: Recht Hausrath & Associates

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT

Utility users taxes are levied against charges for electricity and natural gas provided by Pacific Gas and Electric Company (PG&E). The tax rate is 5 percent of the amount of billings for electricity and natural gas. PG&E collects the tax as part of its billings, and forwards the revenues to the City. Residential energy use is exempt from taxation.

The forecast of additional utility tax revenue from electricity and natural gas consumption due to additional growth in the C-3 District was based on estimates of the energy consumption characteristics of the building space added and removed in the District. The forecast is preliminary; energy consumption in the C-3 District will be the subject of more detailed analysis in later phases of this study. The utility users taxes from electricity and natural gas consumption could be different from those estimated here depending on the outcome of subsequent analysis.

The forecast of additional utility users taxes from energy consumption in the C-3 District consisted of the following steps:

1) Estimate annual consumption of natural gas and electricity for average San Francisco high-rise office building of recent design.

   - Based on a survey of 30 downtown office buildings, the average annual consumption per sq. ft. of space was: (a)

Natural Gas	39,000 Btu
Electricity	18 kwh

2) Estimate annual consumption of natural gas and electricity for retail, hotel, and industrial/warehouse space of recent design.

   - Based on state Energy Commission data on average energy use by building type in the PG&E service area, compute annual consumption per sq. ft. for retail, hotel, and industrial/warehouse space as a percentage of the annual consumption of high-rise office space. (b)

   - For retail space, combine energy use characteristics of restaurants and retail stores (excluding supermarkets). Weight energy consumption by the percentage that retail

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

stores and restaurants each represented of the total retail/restaurant space in the C-3 District in 1981 (from the Downtown EIR Land Use Inventory). This was done to account for the very different energy consumption characteristics of retail stores and restaurants. Compute weighted average annual consumption of natural gas and electricity for combined retail category. Application of this average to future space in the C-3 District implicitly assumes that the mix of retail stores and restaurants in new space is roughly the same as the existing mix in the District.

- Multiply energy consumption ratios for each use (the average annual consumption per sq. ft. of retail, hotel, and industrial/warehouse space as a percentage of the average annual consumption per sq. ft. of high-rise office space) by the consumption estimates from Step #1 to compute consumption characteristics for retail, hotel, and industrial/warehouse space of recent design in San Francisco. This resulted in the following estimates of energy consumption:

Space	Average Annual Consumption Of Natural Gas per Sq. Ft. Of Space	Average Annual Consumption Of Electricity per Sq. Ft. Of Space
Retail	136,500 Btu	23 kwh
Hotel	117,000 Btu	18 kwh
Industrial/ Warehouse	15,600 Btu	7 kwh

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

3) Forecast energy consumption of new development in C-3 District.

- Multiply average annual energy consumption of office, retail, and hotel uses (as computed in Steps #1 and #2) by the amount of new office, retail, and transient hotel space constructed between 1984 and 1990, and between 1990 and 2000 by Alternative (refer to Appendix G for forecasts of new space added in the C-3 District).

- Multiply average annual energy consumption of office by the amount of cultural/institutional educational/other space constructed. The average consumption was applied to only 235,000 sq. ft. of the 565,000 sq. ft. of space added in the cultural/institutional/educational/other category during 1984-1990. All the new space added in this category would be in the Yerba Buena Center redevelopment project area. Current plans call for most of this space to be cultural facilities owned by the Redevelopment Agency or the City, and thus exempt from taxation. The remaining space (about 235,000 sq. ft.) would be privately owned and subject to taxation./c/

- Adjust consumption estimates for increased energy efficiency in future buildings.

  - Assume new space constructed during the 1984-1990 period consumes 80 percent of the electricity and natural gas consumed by the prototypes established in Steps #1 and #2 (on a per sq. ft. basis).

  - Assume new space constructed during the 1990-2000 period consumes 60 percent of the electricity and natural gas consumed by the prototypes established in Steps #1 and #2 (on a per sq. ft. basis).

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

- These assumptions result in smaller increases in efficiency than the forecasts prepared by the staff of the state Energy Commission. The commission staff forecasts, which incorporate revised energy standards for new commercial construction that have yet to be approved, anticipate about a 40 percent increase in energy efficiency by the mid-1980s and further decreases thereafter. Even if approved, however, these energy standards for new buildings may not result in a real increase in efficiency of the same magnitude as implied by the standards. The effect of the standards could be diminished due to lax enforcement of the standards by local governments or by the energy use preferences of building managers and occupants.(d)

4) Forecast energy consumption of C-3 District space removed due to demolition or conversion.

- Most of the space demolished in the cultural/institutional/educational/other category would be vacant space. It was assumed no energy is being consumed in this space, so no utility tax revenues would be lost if the space was demolished.

- It was assumed that space converted to office use from the cultural/institutional/educational/other category would have energy consumption characteristics similar to office use. For these conversions, it was assumed there would be no net change in energy consumption.

- For the office and retail space demolished, and the industrial/warehouse space demolished or converted, the average energy consumption characteristics were assumed to be the same as estimated for the prototypes in Steps #1 and #2. Available information provided no means by which to distinguish between the average

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

energy consumption of recent construction and older space. Thus, the estimates for recent construction (unadjusted for changes in efficiency) were applied to the space removed in these categories. This approach is likely to overestimate the energy consumption "lost" due space removed by demolition and conversion, thereby underestimating the net increase in energy consumption in the C-3 District (and underestimating additional utility tax revenues that result from energy consumption).

- Multiply average consumption per sq. ft. by the amount of space removed due to demolition and conversion between 1984 and 1990, and between 1990 and 2000 by Alternative (refer to Appendix G for forecasts of space removed).

5) Forecast energy consumption of office space added due to conversions from other uses.

- Assume average energy consumption in office space created by conversions from other uses has same per sq. ft. consumption as prototype estimated in Step #1.

- Assume no increases in energy efficiency for space converted to offices over the 1984-2000 period.

- Multiply the average consumption per sq. ft. by the amount of office space added due to conversions between 1984 and 1990, and between 1990 and 2000 by Alternative (refer to Appendix G for forecasts of space added). Adjust for conversions to office from cultural/institutional/educational/other (see Step #4).

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

6) Estimate future energy prices in 1990 and 2000.

- Use forecasts of future prices for natural gas and electricity prepared by the staff of the state Energy Commission, assuming the Biennual Report Committee's estimates of oil price escalation. (e) The energy prices in 1990 and 2000 are shown below:

		PG&E Fuel Prices (Constant 1982 Dollars)	
Fuel Type	Price Unit	1990	2000
Natural Gas	dollars per million Btu	$9.17	$10.62
Electricity	dollars per kwh	$0.0825	$0.0964

7) Compute total charges for energy consumed in new space added to C-3 District, 1990 and 2000.

- Multiply energy consumption from Step #3 by energy prices from Step #6 (additional consumption in 1990 was multiplied by price in 1990 to compute total charges for energy due to new space added between 1984-1990; additional consumption in 2000 was multiplied by price in 2000 to compute total charges for energy due to new space added between 1984-2000).

8) Compute total charges for energy consumed in office space added in C-3 District by conversions from other uses, 1990 and 2000

- Multiply energy consumption from Step #5 by energy prices from Step #6.

9) Compute total charges for energy consumed in new space and space converted to offices in C-3 District, 1990 and 2000.

- Sum Steps #7 and #8.

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

10) Compute total charges for energy consumed in space removed from C-3 District, 1990 and 2000.

- Multiply energy consumption from Step #4 by energy prices from Step #6.

11) Compute net change in charges for energy consumed in C-3 District, 1990 and 2000.

- Subtract Step #10 from Step #9.

12) Compute net change in utility users tax revenues, 1990 and 2000.

- Multiply Step #11 by utility users tax rate of .05.

NOTES:

(a) Based on a review conducted by Environmental Science Associates, Inc., of the estimated energy consumption of 30 downtown office buildings, as reported in environmental impact reports.

(b) Data on energy use by commercial building type in the PG&E service area provided by Hoang Nguyen, Demand Assessment Office, California Energy Resources Conservation and Development Commission.

(c) Based on the main program alternative of the Yerba Buena Center Redevelopment Plan, and a telephone conversation between Recht Hausrath & Associates and Kathy Wiles, Senior Administrative Assistant, San Francisco Redevelopment Agency, March 29, 1983.

(d) Hoang Nguyen, Demand Assessment Office, California Energy Resources Conservation and Development Commission, telephone conversation with Recht Hausrath & Associates, November 1, 1982.

(e) Natural gas price estimate based on: California Energy Resources Conservation and Development Commission, "A Brief Description of the Oil and Gas Assumptions Used for the September 1982 Demand Forecasts," staff memorandum by Bill Woods, Table 4, September 14, 1982.

TABLE L.24: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM CONSUMPTION OF ELECTRICITY AND NATURAL GAS IN C-3 DISTRICT (Continued)

(e) Continued

Electricity price estimate based on California Energy Resources Conservation and Development Commission, "Current Trends Electricity Price Forecast--BR IV Committee Oil Price Escalation", staff memorandum by Patrick Moast, Table 2, August 4, 1982.

SOURCE: Recht Hausrath & Associates

TABLE L.25: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM TELEPHONE USE IN C-3 DISTRICT

Utility user taxes are levied against charges for local and intrastate telephone services. The tax rate is 5.5 percent of the amount of billings for local and intrastate service. Pacific Telephone and Telegraph Company collects the tax as part of telephone customers' bills, and forwards the revenues to the City. Residential telephone services are exempt from taxation.

The forecast of additional utility users tax revenues from telephone service due to additional growth in the C-3 District was based on research conducted by Arthur Anderson & Co. on the City revenues from the C-3-0 zoning district (Subarea 1). (a) This information was used since other data were not available on telephone services or tax collections from different land uses or business activities or from the C-3 District as a whole.

The methodology incorporated the following steps:

1) In September 1980, Subarea 1 accounted for 20 percent of the utility users taxes paid to the City by Pacific Telephone and Telegraph Company (PT&T) for taxable telephone services citywide. (b)

2) In fiscal year 1981-82, utility users tax collections citywide from PT&T amounted to $9,611,600. (c)

3) It was assumed that during 1981-82 the tax collections from Subarea 1 represented the same share of citywide collections as in September 1980. Thus, taxes from Subarea 1 in 1981-82 were 20 percent of $9,611,600, or $1,922,300.

4) Excluding parking, the total space in Subarea 1 in late 1981 was 42,263,000 sq. ft. (d) Parking was excluded because it was thought to have a negligible effect on telephone service.

5) Dividing Step #4 by Step #3 resulted in an average tax per square foot of space in Subarea 1 in 1981-82: 4.55 cents per sq. ft. In 1982 dollars, the average tax from telephone service in Subarea 1 was 4.7 cents per sq. ft. (e)

6) The average tax per sq. ft. computed in Step #5 includes the telephone utility users taxes paid by residents of Subarea 1. Residential telephone service was not exempt

TABLE L.25: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM TELEPHONE USE IN C-3 DISTRICT (Continued)

from the utility users tax in 1980. (f) Because housing represented such a small share of total space in Subarea 1 in late 1981, however, its inclusion in the calculation was considered to have an insignificant effect on the overall average. (g) Thus, the tax rate per sq. ft. computed in Step #5 was assumed to represent the average for non-residential space in Subarea 1.

7) Forecasts of additional utility users taxes from telephone service in the C-3 District were prepared by multiplying the average tax per sq. ft. computed in Step #5 by the amount of non-residential space added and removed between 1984 and 2000./h/ Since there was no basis for differentiating telephone consumption among land uses, the average tax rate was applied to all non-residential uses with the following exceptions:

- The tax rate was not applied to the parking space added or removed from the C-3 District. It was assumed that utility users taxes from telephone service at parking garages or lots would be negligible.

- The tax rate was applied to only 235,000 sq. ft. of the 565,000 sq. ft. of space added in the cultural/institutional/educational/other category during 1984-1990. All the new space added in this category would be in the Yerba Buena Center redevelopment project area. Current plans call for most of this space to be cultural facilities owned by the Redevelopment Agency or the City, and thus exempt from taxation. The remaining space (about 235,000 sq. ft.) would be privately owned and subject to taxation. (i)

- Most of the space demolished in the cultural/ institutional/educational/other category would be vacant space. It was assumed no tax revenues would be lost due to the demolition of this space. Thus, the tax rate was not applied to the amount of demolished space in this category.

8) The tax revenue per sq. ft. was assumed to remain constant in 1982 dollars. The impending deregulation of the telecommunications industry is likely to result in large

TABLE L.25: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM TELEPHONE USE IN C-3 DISTRICT (Continued)

increases in the prices for local and intrastate telephone services. These price increases could exceed the rate of inflation, particularly during the next few years. (j) Yet, it is difficult to predict the change in phone costs that will accompany deregulation and harder still to anticipate price trends through the year 2000. In the absence of a sound basis for estimating future price increases for telephone services, this forecast assumed that phone costs would rise at the rate of inflation (and thus remain constant in 1982 dollars). This assumption is likely to underestimate the revenues from the telephone utility users tax, particularly through 1990.

9) The forecast assumes no change in the average use of telephone service on a per sq. ft. basis. It implicitly assumes that local and intrastate telephone use in the C-3 District in the future will be similar to use characteristics today. If the average telephone use increases on a per sq. ft. basis, the forecasts could underestimate the utility users tax revenues generated in the C-3 District. Similarly, if average telephone use declines (which would seem less likely), the forecast could overestimate utility user tax revenues.

NOTES:

(a) Arthur Andersen & Co., Downtown Highrise District Cost Revenue Study, November, 1980.

(b) Ibid, p. 54.

(c) Victor Wong, Tax Accountant, Tax Collector's Office, City and County of San Francisco, telephone conversation with Recht Hausrath & Associates, March 14, 1983.

(d) See Appendix G, Table G.101.

(e) Adjusted to 1982 dollars based on Consumer Price Index, San Francisco-Oakland SMSA. 1981-82 dollars were converted to 1982 dollars by dividing by .965.

(f) The repeal of the utility users tax on residential utility services was approved in October, 1982. It was effective January 1, 1983.

TABLE L.25: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM TELEPHONE USE IN C-3 DISTRICT (Continued)

(g) Housing and residential hotels together accounted for 0.5 percent of the total space in Subarea 1 in late 1981 (see Appendix G, Table G.12).

(h) The use of the average tax per sq. ft. in Subarea 1 to forecast tax revenues due to growth in the entire C-3 District was assumed to not significantly misrepresent the effect of additional growth on total tax revenues. The current distribution of space among land uses in Subarea 1 is different from the distribution among land uses for the C-3 District as a whole. Yet, the distribution of uses in Subarea 1 is relatively similar to the distribution of uses in the additional space forecast for the District. In 1981, Subarea 1 had a higher proportion of office space and a lower proportion of retail and transient hotel space than is forecast for additional growth in the District as a whole.

(i) Based on the main program alternative of the Yerba Buena Center Redevelopment Plan, and a telephone conversation between Recht Hausrath & Associates and Kathy Wiles, Senior Administrative Assistant, San Francisco Redevelopment Agency, March 29, 1983.

(j) See, for example: James A. White, "Your Money Matters," The Wall Street Journal, March 28, 1983, p.44.

SOURCE: Recht Hausrath & Associates

TABLE L.26: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM WATER CONSUMPTION IN C-3 DISTRICT

Utility users taxes are levied against charges for water provided by the City's Water Department. The tax rate is 5 percent of the amount of charges for water. The Water Department collects the tax as part of water customers' bills, and forwards the revenues to the City's general fund. Residential water service is exempt from taxation.

The forecast of additional utility users tax revenues due to additional growth in the C-3 District was based on the water consumption characteristics of a sample of buildings in the C-3 District. The buildings in the sample were considered representative of construction that could be expected to occur in the C-3 District./a/ The sample consisted of sixteen buildings; the buildings included in the sample are identified in Table L.27.(b)

The methodology incorporated the following steps:

1) For each building in the sample, the Water Department determined the amount of water consumed during the 1982 calendar year.

2) The gross space of each building in the sample was determined from the Downtown EIR Land Use Inventory.

3) The 1982 water consumption per sq. ft. of space was computed for each building by dividing the results of Step #1 by Step #2. The average water consumption for each category of building (office, retail, and hotel) was computed by summing the total water consumption and total space, and dividing consumption by space. This resulted in the following averages:

Use	Average 1982 Water Consumption
Office	24 gallons/sq. ft./year
Retail	28 gallons/sq. ft./year
Hotel	61,700 gallons/sq. ft./year

TABLE L.26: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM WATER CONSUMPTION IN C-3 DISTRICT (Continued)

4) These averages were used as the basis for forecasting future changes in water consumption due to growth in the C-3 District. The forecasts assumed the following averages:

Use	Average Water Consumption For New Development
Office	25 gallons/sq. ft./year
Retail	35 gallons/sq. ft./year
Hotel	60,000 gallons/sq. ft./year

The averages for office and hotel used in the forecast were essentially the same as indicated by the sample, rounded to simplify calculation. The average for retail was increased by 25 percent from the sample average to account for a mix of retail stores and restaurants. Most restaurants consume more water than retail stores. The sample did not provide separate data for restaurants (although some restaurants were included in the consumption figures for office buildings, such as the restaurants in the Embarcadero Center buildings).

It was assumed that new cultural/institutional space would have the same water consumption characteristics as office space.

It was assumed that the new parking constructed in the C-3 District would have a negligible effect on water consumption. No water consumption factor was applied to the parking added in the District.

5) Available information provided no basis for differentiating the water consumption characteristics of new space from the consumption in existing space likely to be demolished or converted in the future. It was assumed that space removed in the C-3 District would have the same water consumption characteristics as the space added. Industrial/warehouse space was assumed to have

TABLE L.26: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM WATER CONSUMPTION IN C-3 DISTRICT (Continued)

the same consumption per sq. ft. as office space. The assumptions for water consumption in removed and coverted space are shown below:

Use	Average Water Consumption Of Space Removed/Converted
Office	25 gallons/sq. ft./year
Retail	35 gallons/sq. ft./year
Cultural/Institutional	25 gallons/sq. ft./year
Industrial/Warehouse	25 gallons/sq. ft./year

It was assumed that the parking removed in the C-3 District would represent only a negligible drop in water consumption. Most removed parking would be in lots. No water consumption factor was applied to the parking removed in the C-3 District.

6) Forecasts of additional water consumption in the C-3 District were prepared by multiplying the average water consumption per sq. ft. of space (as estimated in Steps #4 and #5) by the amount of non-residential space added and removed in the District between 1984 and 2000. The forecast was adjusted for the following factors:

- The average water consumption factor was applied to only 235,000 sq. ft. of the 565,000 sq. ft. of space added in the cultural/institutional/other category during 1984-1990. All of the new space added in this category would be in the Yerba Buena Center redevelopment project area. Current plans call for most of this space to be cultural facilities owned by the Redevelopment Agency or the City, and thus exempt from taxation. The remaining space (about 235,000 sq. ft.) would be privately owned and subject to taxation./b/

- Most of the space demolished in the cultural/institutional/other category would be vacant space. It was assumed no water consumption occurs in this space. Thus the water consumption factor was not applied to the demolished space in this category.

TABLE L.26: METHODOLOGY FOR FORECASTING UTILITY USERS TAX REVENUES FROM WATER CONSUMPTION IN C-3 DISTRICT (Continued)

7) The number of gallons of water consumed in the C-3 District by non-residential uses based on the calculations in Step #6 was converted to water units (one unit equals 748 gallons). Billings for water are based on the number of units consumed.

8) The number of water units consumed in the C-3 District was converted to total billings by multiplying by $0.414. The Water Department's current charge for water is 41.4 cents per unit. This charge was assumed to rise at the rate of inflation, thus remaining constant in 1982 dollars.

9) The additional utility tax revenues from additional water consumption in the C-3 District were computed by multiplying the total water billings from Step #8 by the utility users tax rate of .05.

NOTES:

(a) The buildings in the sample are all of relatively recent construction, except the I. Magnin building which was built in 1946 on a steel frame constructed in 1905 (see Charles Hall Page & Associates, Splendid Survivors: San Francisco's Downtown Architectural Heritage, 1978).

(b) The sample size of 16 buildings was determined by the available resources of the Water Department.

(c) Based on the main program alternative of the Yerba Buena Center Redevelopment Plan, and a telephone conversation between Recht Hausrath & Associates and Kathy Wiles, Senior Administrative Assistant, San Francisco Redevelopment Agency, March 29, 1983.

SOURCE: Recht Hausrath & Associates

TABLE L.27: BUILDINGS IN C-3 DISTRICT CHOSEN FOR SURVEY OF WATER CONSUMPTION CHARACTERISTICS

Building	Address
Office	
Shaklee Building	444 Market Street
Aetna/Foremost-McKesson	1 Post Street
Chevron USA	595 Market Street
Borel Building	120 Howard Street
Security Pacific Bank	1275 Market Street
Embarcadero Center 1 and 2	Sacramento and Battery Streets
Crocker Bank Operations Center	155 Fifth Street
Bank of America Data Center	1455 Market Street
Retail	
Saks Fifth Avenue	384 Post Street
Liberty House	120 Stockton Street
I. Magnin	135 Stockton Street
Hotel	
Hyatt Union Square	345 Stockton Street
Hilton Hotel and Tower	333 O'Farrell Street
Holiday Inn Union Sqare	480 Sutter Street
Pacific Plaza Hotel	501 Post Street

SOURCE: Recht Hausrath & Associates

TABLE L.28: ADDITIONAL CONSUMPTION OF WATER, ELECTRICITY, AND NATURAL GAS IN C-3 DISTRICT IN 1990 and 2000, DUE TO CHANGES IN CONSUMPTION 1984-1990 AND 1990-2000 (a)

Utility	Measure Of Consumption	Additional Utility Consumption In 1990, From Change in Consumption 1984-1990	Additional Utility Consumption In 2000 From Change In Consumption 1990-2000, By Alternative				
			1	2	3	4	5
Water	unit (b)	644,726	862,487	814,245	726,484	538,998	518,803
Electricity	thousand kwh	169,187	204,581	186,175	159,512	100,120	102,515
Natural Gas	million Btu	587,902	601,118	556,915	485,332	340,810	346,663

(a) This table shows additional non-residential utility consumption in 1990 from changes in consumption in the C-3 District due to space added and removed between 1984 and 1990, and the additional non-residential utility consumption in 2000, by Alternative, from changes in consumption due to space added and removed between 1990 and 2000. The figures for 2000 do not include the increase in consumption that occurs during the 1984-1990 period. The total additional consumption in 2000 from increased utility usage during 1984-1990 and 1990-2000 are shown in Table L.29. For a description of the forecasting methodologies, refer to Tables L.24 and L.26.

(b) One unit equals 100 cubic feet, or approximately 748 gallons.

SOURCE: Recht Hausrath & Associates

TABLE L.29: ADDITIONAL CONSUMPTION OF WATER, ELECTRICITY, AND NATURAL GAS IN C-3 DISTRICT IN 2000, DUE TO CHANGES IN CONSUMPTION 1984-2000 (a)

Utility	Measure Of Consumption	Additional Utility Consumption In 2000 From Change In Consumption 1984-2000, By Alternative				
		1	2	3	4	5
Water	unit (b)	1,507,213	1,458,971	1,371,210	1,183,724	1,163,529
Electricity	thousand kwh	373,768	355,362	328,699	269,307	271,702
Natural Gas	million Btu	1,189,020	1,144,817	1,073,234	928,712	934,565

(a) This table shows additional non-residential utility consumption in 2000, by Alternative, from changes in consumption in the C-3 District due to space added and removed between 1984 and 2000. Additional consumption in 1990 from increased utility usage that occurs during 1984-1990, and additional consumption in 2000 from increased utility usage that occurs during 1990-2000, are shown in Table L.28. For a description of the forecasting methodologies, refer to Tables L.24 and L.26.

(b) One unit equals 100 cubic feet, or approximately 748 gallons.

SOURCE: Recht Hausrath & Associates

TABLE L.30: ADDITIONAL UTILITY USERS TAX REVENUE IN 1990 AND 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Source Of Utility Users Tax Revenue	Additional Tax Revenue In 1990 From Change In Consumption 1984-1990	Additional Tax Revenue In 2000 From Change In Consumption 1990-2000, By Alternative				
		1	2	3	4	5
Water	$ 13	$ 18	$ 17	$ 15	$ 11	$ 11
Telephone	536	854	788	668	453	424
Electricity	698	986	897	769	483	494
Natural Gas	270	319	296	258	181	184
Total, All Utilities	$1,517	$2,177	$1,998	$1,710	$1,128	$1,113

(a) This table shows additional utility users tax revenue in 1990 from changes in non-residential utility consumption in the C-3 District due to space added and removed between 1984 and 1990, and the additional utility tax revenue in 2000, by Alternative, from changes in non-residential utility consumption due to space added and removed between 1990 and 2000. The figures for 2000 do not include the tax revenue from increased consumption during the 1984-1990 period. The total additional tax revenue in 2000 from increased utility consumption during 1984-1990 and 1990-2000 are shown in Table L.31. For a description of the forecasting methodologies, refer to Tables L.24, L.25, and L.26.

SOURCE: Recht Hausrath & Associates

TABLE L.31: ADDITIONAL UTILITY USERS TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN UTILITY CONSUMPTION (Thousands of 1982 Dollars) (a)

Source Of Utility Users Tax Revenue	Additional Tax Revenue In 2000 From Change In Consumption 1984-2000, By Alternative (b)				
	1	2	3	4	5
Water	$ 31	$ 30	$ 28	$ 25	$ 24
Telephone	1,390	1,324	1,204	989	960
Electricity	1,802	1,713	1,584	1,298	1,310
Natural Gas	631	608	570	493	496
Total, All Utilities	$3,854	$3,675	$3,386	$2,805	$2,790

(a) This table shows additional utility users tax revenue in 2000, by Alternative from changes in non-residential utility consumption in the C-3 District due to space added and removed between 1984 and 2000. Additional utility tax revenue in 1990 from increased consumption that occurs during 1990-2000, are shown in Table L.30. For a description of the forecasting methodologies, refer to Tables L.24, L.25, and L.26.

(b) The figures in the table are not the simple sum of the 1990 and 2000 figures from the previous table (Table L.30). The cost of electricity and natural gas would increase in real terms between 1990 and 2000 (based on the assumptions discussed in Table L.24). Thus, the energy consumed due to space added during the 1984-1990 period would cost more in 2000 than in 1990, even though the amount of consumption would be unchanged. As a consequence, the utility users taxes from the energy consumed in space added between 1984 and 1990 would be higher in 2000 than in 1990.

SOURCE: Recht Hausrath & Associates

TABLE L.32: METHODOLOGY FOR FORECASTING FRANCHISE TAX REVENUES FROM UTILITY CONSUMPTION IN C-3 DISTRICT

Franchise taxes are levied against charges for electricity, natural gas, and local and intrastate telephone service. The tax rate is one percent of the amount of charges for these utility services. Pacific Gas and Electric Company (PG&E) and Pacific Telephone and Telegraph Company (PT&T) collect the tax as part of their billings, and forward the revenues to the City's general fund.

The forecast of additional franchise tax revenues due to additional growth in the C-3 District was based on the forecast of charges for telephone service, electricity, and natural gas prepared for the utility users tax estimates. The forecasts for the utility users tax estimates excluded residential consumption, since residential utility services are exempt from the utility users tax. Residential utility consumers are not exempt from the franchise tax, however. Because the utility consumption of residential units in the C-3 District was not forecast, the estimates of the franchise tax revenues from additional growth in the District are underestimated by the amount represented by residential utility consumption.

The methodology incorporated the following steps:

1) Use estimates of utility charges prepared for forecast of utility users tax. See Table L.25 for information on charges for telephone services, and Table L.24 for information on charges for electricity and natural gas.

2) Multiply additional charges for utilities in 1990, and 2000 by Alternative, by the franchise tax rate of .01.

SOURCE: Recht Hausrath & Associates

TABLE L.33: ADDITIONAL FRANCHISE TAX REVENUE FROM C-3 DISTRICT IN 1990 AND 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Source Of Franchise Tax Revenue	Additional Tax Revenue In 1990 From Change In Consumption 1984-1990	Additional Tax Revenue In 2000 From Change In Consumption 1990-2000, By Alternative				
		1	2	3	4	5
Telephone	$ 97	$155	$143	$121	$ 82	$ 77
Electricity	140	197	179	154	97	99
Natural Gas	54	64	59	52	36	37
Total, All Utilities	$290	$416	$381	$327	$215	$213

NOTE: Figures may not add to totals due to independent rounding.

(a) This table shows additional franchise tax revenue in 1990 from changes in non-residential utility consumption in the C-3 District due to space added and removed between 1984 and 1990, and the additional franchise tax revenue in 2000, by Alternative, from changes in non-residential utility consumption due to space added and removed between 1990 and 2000. The figures for 2000 do not include the tax revenue from increased consumption during the 1984-1990 period. The total additional tax revenue in 2000 from increased utility consumption during 1984-1990 and 1990-2000 are shown in Table L.34. For a description of the forecasting methodology, refer to Table L.32.

SOURCE: Recht Hausrath & Associates

TABLE L.34: ADDITIONAL FRANCHISE TAX REVENUE FROM C-3 DISTRICT IN 2000, DUE TO CHANGES IN UTILITY CONSUMPTION 1984-2000 (Thousands of 1982 Dollars) (a)

Source Of Franchise Tax Revenue	Additional Tax Revenue in 2000 From Change In Consumption, 1984-2000, By Alternative (b)				
	1	2	3	4	5
Telephone	$252	$240	$218	$179	$174
Electricity	360	343	317	260	262
Natural Gas	126	122	114	99	99
Total, All Utilities	$738	$705	$649	$538	$535

(a) This table shows additional franchise tax revenue in 2000, by Alternative from changes in non-residential utility consumption in the C-3 District due to space added and removed between 1984 and 2000. Additional franchise tax revenue in 1990 from increased utility consumption that occurs during 1984-1990, and additional tax revenue in 2000 from increased consumption that occurs during 1990-2000, are shown in Table L.33. For a description of the forecasting methodology, refer to Table L.32.

(b) The figures in the table are not the simple sum of the 1990 and 2000 figures from the previous table (Table L.33). The cost of electricity and natural gas would increase in real terms between 1990 and 2000 (based on the assumptions discussed in Table L.24). Thus, the energy consumed due to space added during the 1984-1990 period would cost more in 2000 than in 1990, even though the amount of consumption would be unchanged. As a consequence, the franchise taxes from the energy consumed in space added between 1984 and 1990 would be higher in 2000 than in 1990.

SOURCE: Recht Hausrath & Associates

TABLE L.35: METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT

The forecast of additional capital and operating expenditures of the Municipal Railway (Muni) was based on forecasts of additional peak hour Muni ridership in the C-3 District prepared by TJKM Transportation Consultants. These forecasts are presented in Section V.E. Cost estimates were prepared from these ridership forecasts by the San Francisco Public Utilities Commission, Bureau of Finance.

Capital Costs

1) A projection was made of the increase in Muni's fleet necessary to accommodate additional riders. This fleet projection resulted from applying the rate of growth in riders (as forecast by TJKM) to the number of vehicles Muni uses for peak period service to the C-3 District.

2) The projected vehicle mix within the fleet was determined, as approved by Muni's Planning Division. Muni Planning estimates that six motor coach lines will be converted to trolley coaches by the year 2000. Also, they estimate that articulated coaches will replace standard coaches on two trolley coach lines and on seven or eight motor coach lines, depending on growth in demand.

3) Adjustments were made to the fleet projecton, adding vehicles for feeder service and for spare maintenance vehicles. In order to provide adequate service to feed C-3 District routes it would be necessary to increase the number of vehicles in service by 13 percent. Additionally, the number of vehicles needed to provide substitutes for vehicles in maintenance would be increased in order to conform to Muni's spare ratio of 15 percent for motor and trolley coaches and 20 percent for LRVs. These spare factors are based on Muni's fleet Rehabilitiation and Replacement Plan.

4) With these adjustments, fleet forecasts were prepared for the base case (assuming no increase in C-3 District ridership) and for each Alternative. The difference between each Alternative and the base case was the number of vehicles needed to accommodate additional C-3 District ridership. The forecast of additional vehicles needed due to C-3 District growth is shown in Tables L.37 and L.38.

   The forecast may overestimate the effect of C-3 District growth on LRVs during the 1984-1990 period. Although the forecast shows a need for additional LRVs by 1990, Muni may prefer to delay adding more LRVs to its existing fleet until an order of about 30 vehicles is warranted. If so, the LRVs

TABLE L.35: METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT (Continued)

estimated for the 1984-1990 period may not be added until after 1990./a/ In the meantime, it is likely surface motor or trolley coaches would be added to provide increased service on parallel routes./b/

5) The capital cost of the vehicles was estimated, using unit costs from recent bids and grant applications. Unit vehicle costs included all indirect costs (e.g. tools, inspections, etc). The unit cost assumptions are shown below:

	Unit Vehicle Cost (1982 Dollars)
Motor Coach	
Standard	$175,370
Articulated	295,440
Trolley Coach	
Articulated	344,000
LRV	860,000

6) The total cost of these vehicles (in 1982 dollars) was determined by multiplying the number of vehicles of each type (Step #4) by the unit cost for each type (Step #5). The annualized cost was determined by dividing the unit cost of each vehicle type by the expected life of each type (based on the expected vehicle miles of service), and multiplying by the number of vehicles of each type. It was assumed that the interest rate to be applied to the annualized costs would be equal to the rate of inflation. Thus, the present value of the annualized costs in future years would be equal to the costs in 1982 dollars. The forecast of costs for additional vehicles is shown in Tables L.39 and L.40.

7) It was assumed that additional transit vehicles would require additional facilities for storage and maintenance. The existing Muni facilities for vehicle storage and maintenance would be operating at capacity by 1984./c/

8) The cost of storage and maintenance facilities for motor coaches and trolley coaches was assumed to be $100,000 per equivalent standard vehicle (in 1982 dollars). This is a rough estimate based on an analysis of prototype facilities conducted by Wilbur Smith & Associates, consultant to the Municipal Railway's Facilities Master Plan./d/ The estimate includes the cost of land and facilities.

TABLE L.35: METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT (Continued)

9) The total cost for motor and trolley coach facilities was computed by multiplying the number of vehicles needed in 1990 and 2000 (Step #4) by $100,000. Articulated vehicles were converted to equivalent standard vehicles by multiplying by 1.5./e/ Annualized costs were determined by dividing total costs by 30 years, the expected life of the facilities. The residual value of the land was ignored. It was assumed that the interest rate to be applied to the annualized costs would be equal to the rate of inflation. Thus, the present value of the annualized costs in future years would be equal to the costs in 1982 dollars. The forecast of costs for storage and maintenance facilities is shown in Tables L.41 and L.42.

10) The cost of storage and maintenance facilities for LRVs was assumed to be $350,000 per vehicle (in 1982 dollars). This is a rough estimate based in large part on the cost of converting the Geneva car barn into a LRV facility./f/ The estimate includes the cost of land and facilities.

11) The total cost for LRV facilities was computed by multiplying the number of vehicles needed in 1990 and 2000 (Step #4) by $350,000. Annualized costs were determined by dividing total costs by 30 years, the expected life of the facilities. The residual value of the land was ignored. It was assumed that the interest rate to be applied to the annualized costs would be equal to the rate of inflation. Thus, the present value of the annualized costs in future years would be equal to the costs in 1982 dollars. The forecast of costs for storage and maintenance facilities is shown in Tables L.41 and L.42.

Operating Costs

1) Increases in vehicle hours were projected by applying the ridership growth rate (as estimated by TJKM) to base vehicle hours for each mode.

2) Vehicle hour projections were adjusted for the effect of the future fleet mix. By substituting articulated coaches for standard coaches at a ratio of 1 to 1.35, vehicle hours were reduced on affected routes./g/ By converting motor coach routes to trolley coaches, vehicle hours were shifted from motor coach to trolley coach on affected routes.

TABLE L.35: METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT (Continued)

3) Base operating costs for each mode were increased at the rate of increase in vehicle hours of service. Base costs consisted only of variable costs for Muni service to the C-3 District. Fixed costs were ignored, since it is unlikely they would be affected by service increases. Costs of non-C-3 service were also ignored, since it is also unlikely they would be affected by increased C-3 service. An adjustment was made, however, for increased feeder service on non-C-3 routes.

4) An added maintenance cost factor of 25 percent was applied to articulated coach vehicle hours. Resulting operating cost projections were discounted to 1982 dollars at 7.2 percent.

5) With these adjustments, operating cost forecasts were prepared for the base case (assuming no increase in C-3 District ridership) and for each Alternative. The difference between each Alternative and the base case was the increase in operating costs that would result from the change in C-3 District ridership. The forecast of operating costs is shown in Tables L.43 and L.44.

NOTES:

(a) Michael Cronbach, Transit Planner, San Francisco Municipal Railway, telephone conversation with Recht Hausrath & Associates, April 21, 1983. The timing of the purchase of additional LRVs would depend on the growth of C-3 District transit demand on existing LRV routes as well as other factors, such as the proposed extension to the Southern Pacific depot and the implementation of LRV service in the Bayshore corridor.

(b) If motor or trolley coaches are used instead of LRVs to accommodate the estimated increase in LRV demand between 1984 and 1990, the capital costs shown for 1990 in Tables L.39 and L.41 would be overestimated. The costs for 2000 shown in Tables L.40 and L.42 would still represent the expected costs in that year, however, to the extent that the LRVs needed by 1990 (but not then added to the fleet) were purchased after 1990, and the motor and trolley coaches put into substitute service by 1990 were used to accommodate a portion of the additional motor and trolley coach demand between 1990 and 2000.

(c) Pam Hamway, Supervisor, Long-Range Planning Unit, San Francisco Municipal Railway, telephone conversation with Recht Hausrath & Associates, March 30, 1983.

TABLE L.35: METHODOLOGY FOR FORECASTING CAPITAL AND OPERATING COSTS OF MUNICIPAL RAILWAY SERVICES AFFECTED BY GROWTH IN C-3 DISTRICT (Continued)

(d) The prototype facility assumes a 250-bus capacity (equivalent standard vehicle) on a site of about 10 acres. The estimated total cost of $25 million would include about $15 million for land and about $10 million for the construction cost of the storage and maintenance facilities. The site was assumed to be located in the southeast portion of San Francisco, south of the C-3 District. The cost of land would be the most uncertain component of the cost for the facilities, and the component likely to represent the largest portion of the total cost. Different land costs than assumed here could have a major effect on the actual cost of the facilities. (Peter Martin, Wilbur Smith & Associates, telephone conversation with Recht Hausrath & Associates, April 19, 1983.)

(e) Articulated coaches are about 1.5 times the size of standard coaches.

(f) The Geneva site is being converted to an LRV facility at a cost of about $9 million. Its capacity of 40 vehicles would indicate a per vehicle cost of about $225,000. (Gerald Cauthen, Manager, Project Management Division, Bureau of Engineering, San Francisco Public Utilities Commission, telephone conversation with Recht Hausrath & Associates, April 22, 1983.) If land for a new LRV facility were purchased in southeast San Francisco at a value comparable to the assumption for a motor/trolley coach facility (about $1.5 million per acre), land would add a cost of about $100,000 per vehicle. Thus, total costs would be $325,000 per vehicle. This cost was adjusted to $350,000 per vehicle to account for uncertainties regarding the type of maintenance facilities likely to be needed (in particular, whether only light maintenance and paint bays would be necessary, or also bays for heavy maintenance tasks).

(g) On some routes, articulated coaches would replace standard coaches at a ratio of 1 to 1.5.

SOURCE: Recht Hausrath & Associates, based on information provided by San Francisco Public Utilities Commission, Bureau of Finance, and Municipal Railway.

TABLE L.36: METHODOLOGY FOR FORECASTING FARE REVENUES FROM ADDITIONAL PEAK PERIOD MUNI RIDERS

The forecast of additional fare revenues from changes in C-3 District peak period Muni ridership was based on estimates of the average adult fare and the relationship between peak hour and peak period ridership. The forecast was prepared by the San Francisco Public Utilities Commission, Bureau of Finance. The forecast consisted of the following steps:

1) It was assumed that the current average adult fare would be representative of the typical fare from additional C-3 District Muni riders during peak periods./a/

2) Using information on cash fare revenue collections and adult Fast Passes sold between July 1, 1982 and January 31, 1983, an estimate was made of the average adult fare during this period. The estimate was 51¢ per adult trip. This estimate was based on assumptions concerning the average trips per month per pass, the average cash fare per revenue trip, and the percentage of total cash trips made by adults.

3) The average adult fare was assumed to rise at the rate of inflation over the period of analysis, remaining constant in 1982 dollars.

4) The additional fare revenue from additional p.m. peak hour C-3 District Muni ridership was computed by multiplying $.51 by the forecasts of additional p.m. peak hour ridership (as forecast by TJKM; see Section V.E).

5) The total additional peak hour fare revenue (for both the a.m. and p.m. peak hours) was calculated using the ratio of the present p.m. peak hour vehicle demand (by mode) to the a.m. peak hour vehicle demand (by mode), weighted by the capacity of the vehicles. The resulting factor used to convert p.m. peak hour revenue to total daily peak hour revenue was about 1.99 (the sum of a.m. peak hour and p.m. peak hour = p.m. peak hour x 1.99).

6) The daily peak period fare revenue was calculated by converting peak hour fare revenue to peak period revenue. This was done by computing the present average ratio of peak period vehicle demand to peak hour vehicle demand, weighted by vehicle demand by mode and vehicle hours by mode. The resulting conversion factor was 2.75 (peak period = peak hour x 2.75).

TABLE L.36: METHODOLOGY FOR FORECASTING FARE REVENUES FROM ADDITIONAL PEAK PERIOD MUNI RIDERS (Continued)

7) Daily peak period fare revenues were converted to annual peak period fare revenues by multiplying by 260 days (52 weeks/year x 5 work days/week = 260 days). The forecasts of additional annual peak period fare revenues in 1990 and 2000 are shown in Tables L.43 and L.44.

NOTES:

(a) Adults are likely to account for most of the change in peak period trips due to growth in the C-3 District. The cash fare per peak period trip is higher than the overall average cash fare per trip, since discount fares (for seniors, handicapped, and youth) represent a smaller portion of peak period trips than the average of all trips. The use of Fast Passes is heavier during peak period trips than for the average for all trips (Bruce Bernhard, Manager of Analysis Unit, Bureau of Finance, San Francisco Public Utilities Commission, conversation with Recht Hausrath & Associates, April 9, 1983).

SOURCE: Recht Hausrath & Associates, based on information from San Francisco Public Utilities Commission, Bureau of Finance.

TABLE L.37: ADDITIONAL MUNI VEHICLES NEEDED IN 1990 AND 2000 TO ACCOMMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-1990 AND 1990-2000 (a)

Vehicle Type	Additional Vehicles in 1990 From Change In C-3 District Ridership 1984-1990		Additional Vehicles in 2000 From Change In C-3 District Ridership 1990-2000, By Alternative									
			1		2		3		4		5	
	Standard	Articulated	Standard	Articulated	Standard	Articulated	Standard	Articulated	Standard	Articulated	Standard	Articulated
Motor Coach	18	14	10	16	10	15	9	15	7	12	8	14
Trolley Coach	--	35	--	59	--	55	--	52	--	50	--	53
Subtotal, Motor and Trolley Coach	18	49	10	75	10	70	9	67	7	62	8	67
LRV		15		17		15		14		13		13
TOTAL VEHICLES, ALL TYPES	82		102		95		90		82		88	

(a) This table shows additional Muni vehicles needed in 1990 to accommodate changes in Muni ridership in the C-3 District that occur between 1984 and 1990, and the additional vehicles needed in 2000, by Alternative, from changes in Muni ridership that occur between 1990 and 2000. The figures for 2000 do not include the vehicles needed as a result of changes in ridership during the 1984-1990 period. The total additional Muni vehicles in 2000 from increased ridership during 1984-1990 and 1990-2000 are shown in Table L.38. For a description of the forecasting methodology, refer to Table L.35.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.38: ADDITIONAL MUNI VEHICLES NEEDED IN 2000 TO ACCOMMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP 1984-2000 (a)

Vehicle Type	Additional Vehicles in 2000 From Change In C-3 District Ridership 1984-2000, By Alternative									
	1		2		3		4		5	
	Standard	Articulated	Standard	Articulated	Standard	Articulated	Standard	Articulated	Standard	Articulated
Motor Coach	28	30	28	29	27	29	25	26	26	28
Trolley Coach	--	94	--	90	--	87	--	85	--	88
Subtotal, Motor and Trolley Coach	28	124	28	119	27	116	25	111	26	116
LRV		32		30		29		28		28
TOTAL VEHICLES, ALL TYPES	184		177		172		164		170	

(a) This table shows additional Muni vehicles needed in 2000 by Alternative, to accommodate changes in Muni ridership in the C-3 District that occur between 1984 and 2000. Additional vehicles needed in 1990 from increased ridership that occurs during 1984-1990, and additional vehicles in 2000 from increased ridership that occurs during 1990-2000, are shown in Table L.37. For a description of the forecasting methodology, refer to Table L.35.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.39: CAPITAL COST OF ADDITIONAL MUNI VEHICLES NEEDED IN 1990 AND 2000 TO ACCOMMODATE CHANGES IN C-3 DISTRICT MUNI RIDERSHIP, 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Vehicle Type	Cost of Vehicles Needed In 1990 Due To Change in C-3 District Ridership 1984-1990	Cost of Vehicles Needed In 2000 Due To Changes In C-3 District Ridership 1990-2000, By Alternative				
		1	2	3	4	5
Motor Coach	$ 7,293	$ 6,481	$ 6,185	$ 6,010	$ 4,773	$ 5,539
Trolley Coach	12,040	20,296	18,920	17,888	17,200	18,232
LRV	12,900	14,620	12,900	12,040	11,180	11,180
Total	$32,233	$41,397	$38,005	$35,930	$33,153	$34,951
Annualized Cost (b)	$ 709	$ 844	$ 794	$ 748	$ 672	$ 725

(a) This table shows the cost of additional Muni vehicles needed in 1990 to accommodate changes in Muni ridership in the C-3 District that occur between 1984 and 1990, and the cost of additional vehicles needed in 2000, by Alternative, to accommodate changes in ridership that occur between 1990 and 2000. The figures for 2000 do not include the vehicles needed due to changes in ridership during the 1984-1990 period. The cost of total additional vehicles needed in 2000 to accommodate increased ridership during 1984-1990 and 1990-2000 is shown in Table L.40. For a description of the forecasting methodology, refer to Table L.35.

(b) Based on expected life of vehicles. Assumes interest rate equal to rate of inflation, so present value of vehicle cost in future years is equal to cost in 1982 dollars.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.40: CAPITAL COST OF ADDITIONAL MUNI VEHICLES NEEDED IN 2000 TO ACCOMMODATE CHANGE IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000 (Thousands of 1982 Dollars) (a)

Vehicle Type	Cost of Vehicles Needed In 2000 Due To Change In C-3 District Ridership 1984-2000, By Alternative				
	1	2	3	4	5
Motor Coach	$13,774	$13,478	$13,303	$12,066	$12,832
Trolley Coach	32,336	30,960	29,928	29,240	30,272
LRV	27,520	25,800	24,940	24,080	24,080
Total	$73,630	$70,238	$68,171	$65,386	$67,184
Annualized Cost (b)	$ 1,553	$ 1,503	$ 1,457	$ 1,381	$ 1,434

(a) This table shows the cost of additional Muni vehicles needed in 2000, by Alternative, to accommodate changes in Muni ridership in the C-3 District that occur between 1984 and 2000. The cost of additional vehicles needed in 1990 due to changes in ridership that occur during 1984-1990, and the cost of additional vehicles needed in 2000 due to changes in ridership that occurs during 1990-2000, are shown in Table L.39. For a description of the forecasting methodology, refer to Table L.35.

(b) Based on expected life of vehicles. Assumes interest rate equal to rate of inflation, so present value of vehicle cost in future years is equal to cost in 1982 dollars.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.41: CAPITAL COST OF ADDITIONAL VEHICLE MAINTENANCE AND STORAGE FACILITIES NEEDED IN 1990 AND 2000 TO ACCOMMODATE ADDITIONAL MUNI VEHICLES, 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

Vehicle Type	Cost of Facilities Needed In 1990 Due To Change In Vehicles 1984-1990	Cost of Facilities Needed In 2000 Due To Change In Vehicles 1990-2000, By Alternative				
		1	2	3	4	5
Motor/Trolley Coach	$ 9,150	$12,250	$11,500	$10,950	$10,000	$10,850
LRV	5,250	5,950	5,250	4,900	4,550	4,550
Total	$14,400	$18,200	$16,750	$15,850	$14,550	$15,400
Annualized Cost (b)	$ 480	$ 607	$ 558	$ 528	$ 485	$ 513

(a) This table shows the cost of additional vehicle maintenance and storage facilities in 1990 needed due to changes in Muni vehicles serving the C-3 District that occur between 1984 and 1990, and the cost of additional maintenance and storage facilities in 2000, by Alternative, from changes in Muni vehicles that occur between 1990 and 2000. The figures for 2000 do not include the facilities needed due to vehicles added during the 1984-1990 period. The total cost of additional facilities in 2000 due to vehicles added during 1984-1990 and 1990-2000 is shown in Table L.42. For a description of the forecasting methodology, refer to Table L.35.

(b) Annualized over 30 years assuming rate of interest equal to rate of inflation (so present value of cost in future years is equivalent to cost in 1982 dollars).

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.42: CAPITAL COST OF ADDITIONAL VEHICLE MAINTENANCE AND STORAGE FACILITIES NEEDED IN 2000 TO ACCOMMODATE ADDITIONAL MUNI VEHICLES, 1984-2000 (Thousands of 1982 Dollars) (a)

	Cost of Facilities Needed In 2000 Due to Change In C-3 Vehicles 1984-2000, By Alternative				
Facility Type	1	2	3	4	5
Motor/Trolley Coach	$21,400	$20,650	$20,100	$19,150	$20,000
LRV	11,200	10,500	10,150	9,800	9,800
Total	$32,600	$31,150	$30,250	$28,950	$29,800
Annualized Cost (b)	$ 1,087	$ 1,038	$ 1,008	$ 965	$ 993

(a) This table shows the cost of additional vehicle maintenance and storage facilities in 2000, by Alternative, needed due to changes in Muni vehicles serving the C-3 District that occur between 1984 and 2000. The cost of additional facilities in 1990 due to vehicles added during 1984-1990, and the cost of additional facilities in 2000 due to vehicles added during 1990-2000, are shown in Table L.41. For a description of the forecasting methodology, refer to Table L.35.

(b) Annualized over 30 years assuming rate of interest equal to rate of inflation (so present value of cost in future years is equivalent to cost in 1982 dollars).

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.43: NET CHANGE IN MUNI OPERATING COST IN 1990 AND 2000 DUE TO CHANGE IN C-3 DISTRICT MUNI RIDERSHIP, 1984-1990 AND 1990-2000 (Thousands of 1982 Dollars) (a)

	Additional Cost In 1990 Due To Change In C-3 District Ridership 1984-1990	Additional Cost in 2000 Due To Change In C-3 District Ridership 1990-2000, By Alternative				
		1	2	3	4	5
Additional Operating Cost	$6,599	$10,366	$9,944	$9,617	$9,099	$9,540
Additional Fare Revenue (b)	2,565	3,248	3,023	2,783	2,695	2,863
Additional Net Operating Cost	$4,034	$7,118	$6,921	$6,834	$6,404	$6,677

(a) This table shows the net change in Muni operating costs in 1990 from changes in Muni ridership in the C-3 District that occur between 1984 and 1990, and the net change in operating costs in 2000, by Alternative, from changes in ridership that occur between 1990 and 2000. The figures for 2000 do not include the net change in costs from changes in ridership during the 1984-1990 period. The total additional net operating cost in 2000 from increased ridership during 1984-1990 and 1990-2000 is shown in Table L.44. For a description of the forecasting methodology, refer to Tables L.35 and L.36.

(b) Assumes average fare would keep pace with inflation over time, remaining constant in 1982 dollars.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

TABLE L.44: NET CHANGE IN MUNI OPERATING COST IN 2000 DUE TO CHANGE IN C-3 DISTRICT MUNI RIDERSHIP, 1984-2000 (Thousands of 1982 Dollars) (a)

	Additional Cost In 2000 Due To Changes In C-3 District Ridership, 1984-2000, By Alternative				
	1	2	3	4	5
Additional Operating Cost	$16,965	$16,543	$16,216	$15,698	$16,138
Additional Fare Revenue (b)	5,812	5,587	5,347	5,260	5,427
Additional Net Operating Cost	$11,153	$10,956	$10,869	$10,438	$10,711

(a) This table shows the net change in Muni operating costs in 2000, by Alternative, from changes in Muni ridership in the C-3 District that occur between 1984 and 2000. Additional operating costs in 1990 from increased ridership that occurs during 1984-1990, and additional operating costs in 2000 from increased ridership that occurs during 1990-2000, are shown in Table L.43. For a description of the forecasting methodology, refer to Tables L.35 and L.36.

(b) Assumes average fare would keep pace with inflation over time, remaining constant in 1982 dollars.

SOURCE: San Francisco Public Utilities Commission, Bureau of Finance; based on C-3 District Muni ridership forecasts prepared by TJKM Transportation Consultants.

APPENDIX M: ANALYSIS OF WIND TUNNEL STUDIES

INTRODUCTION

Wind tunnel tests of scale models of proposed buildings have been part of the environmental review process in San Francisco since 1974. Between 1974 and late 1982, 52 proposed building designs in downtown San Francisco were tested in 34 wind tunnel studies using the same methodology to predict the extent and severity of impacts on wind accelerations at ground level. A listing of the buildings included in these analyses is included at the end of this appendix (see Table M.1). The wind tunnel studies provide a data base from which to develop relationships between wind effects and building characteristics.

The approach used in the analyses was to identify building descriptors known to affect wind impacts and to categorize the impact of each design. In this way, combinations of building descriptors that result in increased wind accelerations can be identified. Conversely, combinations of building descriptors that have little or no effect on wind conditions can also be identified.

WIND IMPACT FACTORS

Wind tunnel studies have shown that three basic building characteristics influence wind acceleration:

- exposure of the building to the prevailing wind direction,
- the size and uniformity of the building's windward facade, and,
- the location of the building site on the block.

Building Exposure to Prevailing Winds

The exposure of a building is simply the amount of the building that extends above upwind buildings. The more exposed a building is, the greater the volume and momentum of the wind intercepted and diverted to street level, and the greater the potential for wind accelerations. Each project for which a wind study was conducted (see Table M.1) was examined to determine the percentage of its west facade exposed to west winds.

Three categories of wind exposure were used:
- Category 1 - greater than 75% exposed,
- Category 2 - 25% to 75% exposed, and,
- Category 3 - less than 25% exposed.

Building Size and Configuration

The shape, area and uniformity of the upwind (in San Francisco, westward) facade is another factor that determines pressure forces and wind accelerations near a building. Other factors being equal, the greater the area of the facade, the greater the typical wind accelerations at street level. Relatively large, uniform facades typically were found to result in greater wind accelerations than were narrow or complex facades with numerous setbacks.

The extent and uniformity of the westward facade of each building was categorized as follows:
- Category A - uniform facade,
- Category B - some variation (small setbacks, cutouts), and,
- Category C - irregular (multiple setbacks, cutouts, irregular shape).

Building Location

The location of a building within its block has little overall effect on the magnitude of wind accelerations, but does determine where accelerations occur. Because a highrise structure causes wind accelerations along its upwind facade and near the upwind corners, a building on the upwind side of the block has the greatest potential for causing wind accelerations in pedestrian areas. Conversely, a building located on the downwind side of a block has the least potential for pedestrian impacts because wind accelerations occur within the block and over the rooftops of surrounding buildings. Building locations were categorized as follows:

- Category 1 - upwind,
- Category 2 - midblock, and,
- Category 3 - downwind.

EVALUATION OF WIND IMPACT FACTORS

By applying the above descriptors to each building studied, a simple designation could be assigned. Thus, a building designated 1-B-2 would be a building greater than 75% exposed to prevailing winds, with some facade variation, and located mid-block. By examining the impacts of each building type, the relative importance of each factor or combination of factors was evaluated.

The wind tunnel studies used in this analysis all expressed measured wind speeds as a ratio between the ground level wind and a reference windspeed. The reference windspeed was in all cases the same. Additionally, windspeeds were categorized as ranging from "very low" to "very high." The impact of each building was categorized as follows:

- Little Impact - maximum increase in windspeed ratio less than 50%, and strongest wind measured in the "moderate" category or less;
- Moderate Impact - maximum increase in windspeed ratio 50% or more and/or increased to "high" category; and,
- Significant Impact - increase in windspeed ratio greater than 100% and/or increased to "very high" category.

The analysis showed that location on the block was not necessarily an important factor in determining impacts, but in general, upwind sites resulted in greater impacts than midblock locations. As none of the buildings were classified as downwind on the block, no conclusions could be drawn concerning impacts of buildings in these locations. The uniformity of the windward facade was found to be an important factor. Buildings with irregular facades or unusual shape were all found to have "little impact" on wind accelerations at street level.

The exposure of the west facade was found to be the most important determinant of wind impacts. Buildings with less than 25% of their west facades exposed to west winds were generally found to have "little impact."

TABLE M.1: DOWNTOWN PROJECTS TESTED IN WIND TUNNEL

PROJECT NAME (a)

1. Spear & Main Street Office Building
2. Hunt-Knight Mixed Use Project
3. 315 Howard Street Building
4. Holiday Inn
5. One Sansome Street Office Building
6. Howard and Main Office Building
7. California-Powell Hotel
8. Pine-Kearny Hotel
9. 595 Market Street Building
10. 505 Sansome Street
11. Bank of Tokyo Office Building
12. 444 Market Street Building
13. State Compensation Insurance Fund Building
14. Eastern Park Apartments
15. Pacific Lumber Company Building
16. Mason/O'Farrell Project
17. 101 Mission Street Building
18. 101 Montgomery Street Building
19. Holiday Inn - 8th Street
20. Hilton Tower II
21. Ramada Inn
22. Nob Hill Towers
23. San Francisco Federal Savings Building
24. 456 Montgomery Office Building
25. Bechtel Highrises
26. Daon Building
27. Federal Reserve Bank Building
28. Pacific Gateway
29. Montgomery-Clay Office Building
30. Mason-O'Farrell Project
31. 5 Fremont Center
32. 25 Jessie Street Building
33. Hines Building (101 California Street)
34. California/Front Office Building

(a) The names listed are those by which the projects were known at the time the wind tunnel tests were conducted. The project name may have changed subsequently.

SOURCE: Donald Ballanti, Consulting Meteorologist

APPENDIX N: SKYLINE IMAGE ANALYSES

Figures V.H.4.1 through V.H.4.6 show approved and projected construction projects superimposed on a photograph of the existing C-3 Use District (Figure IV.H.4.1). The photo was taken from Potrero Hill in order to show the entire length of the study area and to most clearly show the portions of the study area in which most future development is forecast to occur under all Alternatives. To provide an unobstructed panorama, the photograph was taken from the roof of the former Patrick Henry School (now a City office building) at 639 Vermont Street. The closest approximation of this view at street level is from the corner of Kansas and 19th Streets.

Schematic representations of buildings under construction in 1982 are superimposed upon the skyline view shown in Figure IV.H.4.1 to show the skyline as it will appear in 1984 (see Figure IV.H.4.2). Figure V.H.4.1 adds to Figure IV.H.4.2 buildings which have been approved, were in formal review in December 1982, or are proposed in the Yerba Buena Redevelopment Area. These buildings comprise the new development forecast to be completed in the C-3 District by about 1990. Figures V.H.4.2 through V.H.4.6 show a possible configuration of new construction occuring from 1990 to 2000 as it would appear in 2000 under each of the five Alternatives. Prototypical buildings (see Appendix D) are located on sites which have been identified in the real estate and development analysis (see Appendix G) as likely development sites based on the current intensity of use, forecasts of demand for office space, rents, costs and the constraints on development embodied in the Alternatives.

The configuration and massing of individual buildings is based on an analysis of prototypes carried out for each Alternative and presented in Appendix D. These prototypes conform to height, bulk and other regulations of each Alternative, and take advantage of the economically feasible bonuses and incentives they provide. The prototypes represent feasible buildings under the various Alternatives, not allowable building envelopes. The working basemap used in the preparation of each skyline graphic for each Alternative reflects the total number of additional square feet of office space forecast for the year 2000 under that Alternative. Not all new buildings shown on the basemaps are visible in the skyline views, however, since some buildings would be screened by intervening buildings. Standard techniques of perspective drawing were used to project the prototype buildings onto the skyline photos. These new buildings are represented by a half-tone pattern.